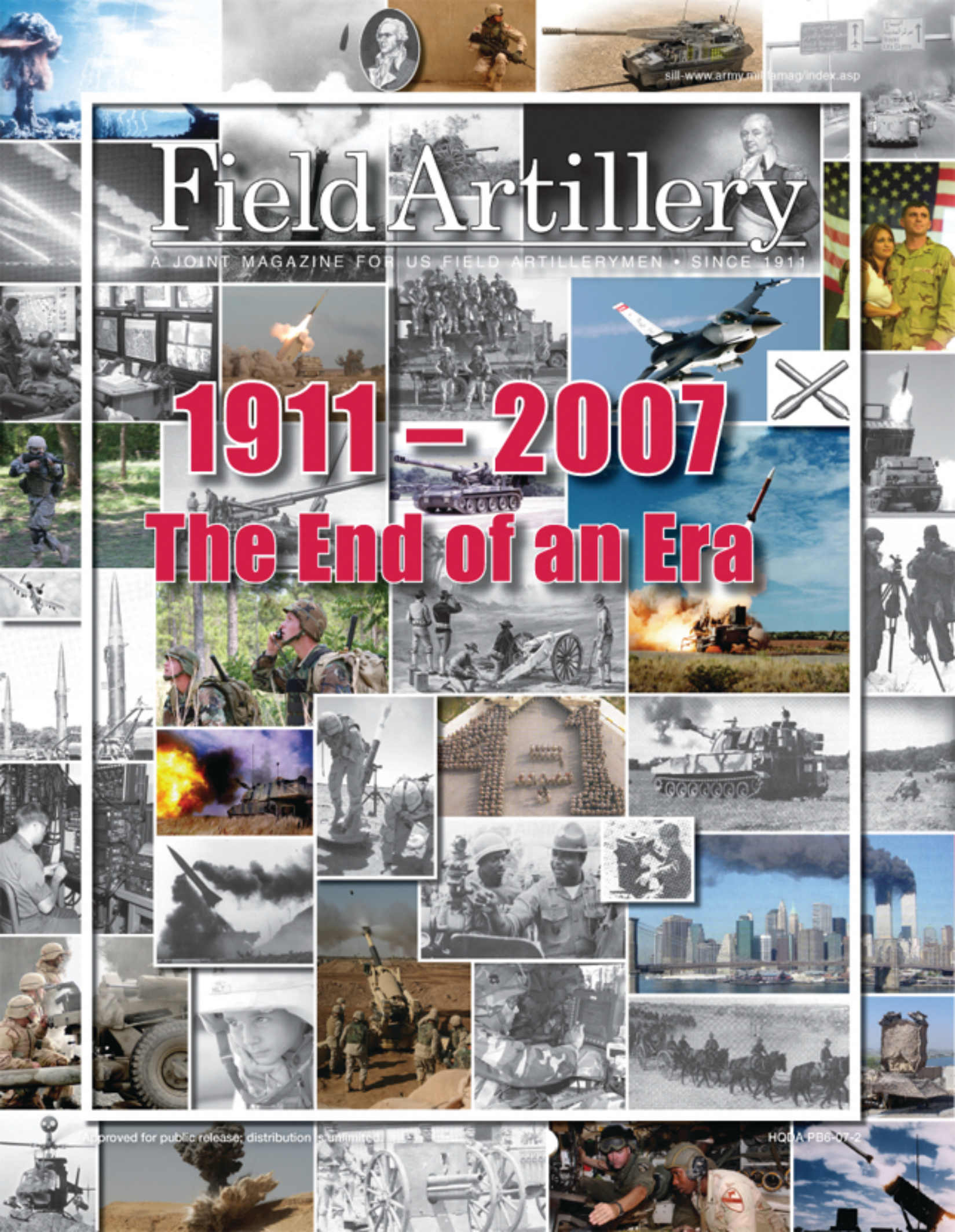


HQDA PB6-07-2

Field Artillery

A JOINT MAGAZINE FOR US FIELD ARTILLERYMEN • SINCE 1911

March-April 2007 HQDA PB6-07-2

ARTICLES

DEPARTMENTS

Note: The *Field Artillery* staff wishes to thank RCW Communication Design Inc., of Falls Church, Virginia, for the quality design and layout of this magazine.

Front Cover: The wrap-around front and back covers of this final edition are a collage of selected photos and art printed in *Field Artillery* professional magazines from 1911 to 2007.

PURPOSE: (as stated in the first **The Field Artillery Journal** in 1911): *To publish a journal for disseminating professional knowledge and furnishing information as to the Field Artillery's progress, development and best use in campaign; to cultivate, with the other arms, a common understanding of the power and limitations of each; to foster a feeling of interdependence among the different arms and of hearty cooperation by all; and to promote understanding between the regular and militia forces by a closer bond; all of which objects are worthy and contribute to the good of our country.*

OFFICIAL DISTRIBUTION: US Army and Marine Corps Active and Reserve Components FA units: seven copies to corps artillery, division artillery, FA/fires brigade, brigade combat team (BCT), Stryker BCT, regimental combat team units and Marine regimental headquarters and battlefield coordination detachments (BCDs); 13 copies to FA/fires battalions; and seven copies to fire support elements (FSEs), fires and effects cells (FECs), fire support cells (FSCs), fire support coordination centers (FSCCs), force fires coordination centers (FFCCs) and separate batteries or detachments. In addition, other US government agencies that work with FA or fire support personnel, issues, material, doctrine, training, organization or equipment may request a limited number of free copies. These include, but are not limited to, other branch or service units, training centers, schools, recruiting commands, readiness groups, libraries, education centers, project managers, arsenals, laboratories, state adjutant generals, liaison officers, military academies, ROTCs, major commands, military attaches and public affairs offices.

PAID SUBSCRIPTIONS: Those ineligible for Official Distribution may subscribe through the US Field Artillery Association, P.O. Box 33027, Fort Sill, OK 73503-0027 or www.fieldartillery.org. Telephone numbers are (580) 355-4677 or FAX (580) 355-8745 (no DSN). Dues are $20 per year to US and APO addresses. The international rate is $55 for a one-year subscription.

SUBMISSIONS: Mail to Editor, **Field Artillery**, P.O. Box 33311, Fort Sill, OK 73503-0311. Telephone numbers are DSN 639-5121/6806 or commercial (580) 442-5121/6806 or FAX 7773 with DSN or commercial prefixes. Email is famag@conus.army.mil. Material is subject to edit by the **Field Artillery** staff.

REPRINTS: **Field Artillery** is pleased to grant permission to reprint articles. Please credit the author and **Field Artillery**.

POSTMASTER: **Field Artillery** (ISSN 0899-2525) (USPS 309-010) is published bimonthly. Periodicals postage is paid by the Department of the Army at Lawton, OK 73501 and an additional mailing post office. Send address changes to **Field Artillery**, P.O. Box 33311, Fort Sill, OK 73503-0311.

Redleg Hotline & Email
(Organization, Material, Doctrine and Training)
DSN 639-2204 or (580) 442-2204 (24-Hours)
redleg@sill.army.mil

CounterStrike Task Force
https://counterstrike.army.smil.mil

Field Artillery Home Page & Email
sill-www.army.mil/famag/index.asp; famag@conus.army.mil

By Order of the Secretary of the Army:
George W. Casey, Jr.
General, United States Army
Chief of Staff

Official: Joyce E. Morrow
Joyce E. Morrow
Administrative Assistant to the Secretary of the Army, 0629703

David C. Ralston
Major General, United States Army
Field Artillery School Commandant

Editor: Patrecia Slayden Hollis

Art Director: Vacant

Managing Editor: Vacant

Assistant Editor: Tonya S. Goforth

Major General David C. Ralston
Chief of Field Artillery

History as Prologue—Beginning of a New Era

This March-April 2007 edition of *Field Artillery* marks an end of an era. During the past century, this professional magazine has performed a critical role in preparing the Field Artillery (FA) for war. It also has furnished a forum for vigorous debate over doctrine, modernization, equipment design and other important and timely issues. Since 1911, a professional magazine for Field Artillerymen has been published almost continuously, moving backward in time from today's magazine—*Field Artillery* (reprinted in the FA Association's *FA Journal*), *The Field Artilleryman*, *Artillery Trends*, *Tactical and Technical Trends in Artillery for Instruction* and the original *The Field Artillery Journal*.

Although this edition of *Field Artillery* concludes an illustrious era, the upcoming integrated FA-Air Defense Artillery (ADA) *Fires* Bulletin, the next edition, offers the FA and ADA branches and Fires Center of Excellence, Fort Sill, Oklahoma, exciting new opportunities to exchange ideas about tactics, doctrine, equipment design and other issues critical to the branches. The proud tradition of these two combat arms branches will continue into the future.

When I became the Chief of Field Artillery, a longtime friend and noted historian told me that I always should view things in a historical perspective. Only then would I be able to maintain the right balance, resisting the temptation to overcorrect the challenge of the day. After serving as Chief for 20 months, I fully *concur*. History is prologue, and the circumstances today are remarkably similar to those of the past.

This magazine has chronicled the use of Field Artillerymen as infantrymen (and other nonstandard missions) not only during recent conflicts, such as Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF), but also since the magazine's inception in 1911. Understanding where we have been as a branch never has been more important for understanding where we need to go in the future.

Brief History of the FA. The American Artillery always has played a decisive role in combat. During the American Revolution, colonial cannon crews contributed to victories at Boston, Trenton, Monmouth, Yorktown and other places. With effectively served artillery, the Continental Army finally defeated the British and won American independence.

Field Artillerymen spent most of their time during the 80 years after the American Revolution guarding the frontier as infantrymen. Although their gunnery skills tended to "rust," they returned to the gun line frequently. During the War of 1812, Lieutenant Colonel Winfield Scott's trained gun crews maneuvered their field pieces around the battlefield like seasoned veterans to stop determined British offensives along the Niagara River in the Battles of Chippewa and Lundy's Lane in July 1814. Later, Captain James Duncan's and Major Samuel Ringgold's batteries performed superbly at Palo Alto in May 1846 in the Mexican-American War. At the Battle of Buena Vista in February 1847, Captain Braxton Bragg's battery galloped into action to stem an aggressive attack by Santa Anna's Mexican army and opened the way for a vital American victory.

In the 1850s, after frontier duty serving as infantrymen, once again losing hard-won skills, gunners had their first opportunity to display their talents in the Civil War. Colonel Henry J. Hunt's massed Field Artillery fire repelled Confederate infantry assaults at Malvern Hill in July 1862, allowing the Army of the Potomac to escape to safety. One year later, Hunt replicated this feat at the Battle of Gettysburg when he stopped Pickett's charge. Union and Confederate Field Artillerymen repeatedly destroyed

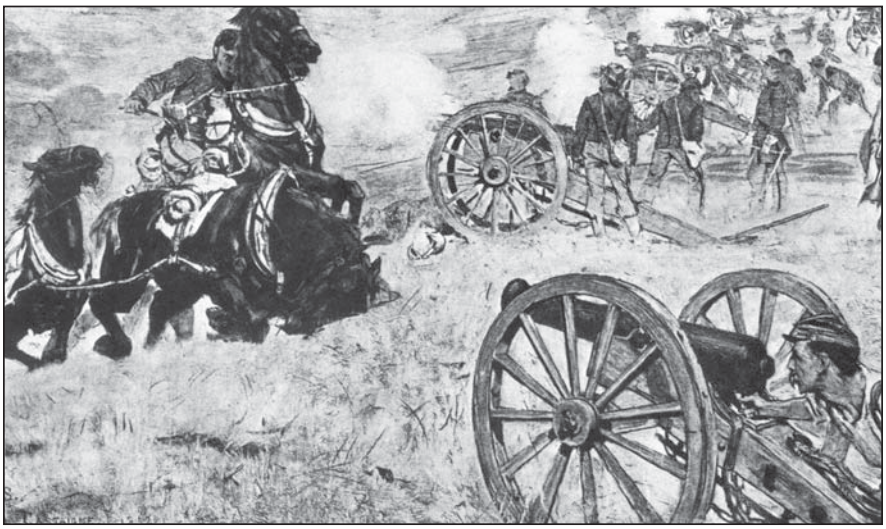
Photo by SSG Bronco Suzuki

Redlegs continue to serve as Infantrymen in Iraq. Soldiers of A Battery, 2nd Battalion, 17th Field Artillery, attached to the 1st Cavalry Division, patrol the streets of east Baghdad on 2 November 2006. A/2-17 is part of the 2nd Infantry Brigade Combat Team, 2nd Infantry Division.

infantry attacks in these and other Civil War battles to preserve their respective armies and demonstrated their ability to turn the tide of battle.

For 30 years after the Civil War, Field Artillerymen served as infantrymen on the frontier where their skills languished. The result was the Field Artillery's poor performance in the Spanish-American War of 1898.

In 1911, the War Department opened the School of Fire for Field Artillery men at Fort Sill. The school was to train Field Artillerymen on emerging technology and indirect fire techniques. That same year, *The Field Artillery Journal* was established as the branch's professional magazine. Its first editor was Captain William M. Snow, later Major General Snow, after whom the Field Artillery School's Snow Hall was named. The US Army Field Artillery Association, also established by Captain Snow, printed the first edition of the magazine, January-March 1911. The new school, journal and association were designed to create a professional Field Artillery branch.



An artist's rendition of Colonel Henry J. Hunt repelling Confederate assaults on Malvern Hill with massed Field Artillery fire in July 1862, which allowed the Army of the Potomac to escape to safety.

Then in 1919, the School of Fire was renamed the Field Artillery School; its avowed purpose was never to allow the debacle of the Spanish-American War to occur again.

World War I provided the school the first opportunity to show off its trained Field Artillerymen. In July 1918, the 3rd Division's Field Artillery stood firm on the Marne River despite the ferocity of Germany's last desperate gamble for victory, helping to earn the division the nickname "Rock of the Marne." The Field Artillery established itself as the "Greatest Killer on the Battlefield" during World War I by inflicting more than 75 percent of the enemy's casualties.

War gave way to peace in 1918, and the guns fell silent until World War II. Although the Field Artillery's tactics of massing fires had not changed as the US Army entered World War II, the fire direction center (FDC) and graphical firing tables (GFTs) developed at the Field Artillery School in the 1930s along with organic Field Artillery aerial observation produced devastating concentrations of fire. The coupling of the aerial and ground forward observers (FOs) and the guns proved to be an effective system.

For example, as German mechanized and armored forces poured out of Kassarine Pass in February 1943, American Field Artillerymen, employing the FDC effectively for the first time, stopped the German attack and paved the way for the Allies to clear the Germans from North Africa. At Elsenborn and Monshau during the Battle of the Bulge and other World War II battles, American Field Artillery saved the day and contributed significantly to victory.

Fire support from American Field Artillery continued into the Cold War and afterward. At Kung Ri Pass in Korea and Landing Zone X-Ray in Vietnam, American Field Artillery saved friendly lives. In more recent times, American field guns in Operation Desert Storm (ODS) and OIF allowed ground force commanders to attack unimpeded by enemy indirect fires, contributing to stunning victories.

Past as Prologue. The past *is* prologue to the future—peacetime preparation and training lead to success in war. For example, the resolute peacetime training by Duncan's and Ringgold's gun crews in the 1840s led to the impressive victory at Palo Alto in the Mexican War. The Field Artillery School's work over the years paved the way for effective indirect fires in World War I, World War II, the Korean War, Vietnam, ODS, OEF and OIF.

In contrast, the failure to train before the War of 1812 and the Spanish-American War prevented gun crews from exploiting their field pieces and forced Field Artillerymen to hone their skills under hostile fire.

Even though the Field Artillery has served effectively and contributed to many American victories throughout US history, some skeptics see a minimal role for the Field Artillery in the contemporary operating environment (COE). This skepticism parallels that of critics in the past. Some predecessors of the 1700s and 1800s also failed to see a future for Field Artillery during peacetime or on the frontier in operations against Native Americans; these predecessors employed Cannoneers as infantrymen in their "COEs."

The Army paid in blood for this, especially at the beginning of the War of 1812, Civil War and Spanish-American War. In these cases, Field Artillerymen had to learn their trade in the crucible of war. Failure to prepare in peacetime led to failure at the outset of war. We must learn from this lesson and commit our resources and energy to keeping Field Artillerymen skilled to conduct full-spectrum operations.

As we become adaptive and forward-looking, a failure to consider where we have been is a critical mistake. The key is to maintain the right balance between what history tells us and how emerging technologies and new organizations and employment techniques change the parameters of the force's operations.

With this edition of *Field Artillery*, we close out an era of almost 90 years, starting with the first edition of *The Field Artillery Journal* in 1911, and begin another. And as history is prologue, the *Fires* Bulletin, the child of two branch magazines with proud histories of supporting the force, will remain committed to developing combat ready US Artillerymen. This nation will need the full firepower of her Artillery once again—*count* on it.

Correction to: "The FA Master Gunner and Reset of the Redeployed FA Battalion"

In my column in the January-February 2007 edition, I made an incorrect statement when recommending how to rate Master Gunners. In the article, I suggested the following rating scheme: the command sergeant major (CSM) rate the Master Gunner and the S3 senior rate the Master Gunner with the battalion commander reviewing the efficiency report. I since have learned that my proposed rating scheme conflicts with new Army Regulation (AR) 623-3 Military Evaluations System because the rater (battalion CSM) must be supervised by the senior rater (in this case, the S3, who is not the CSM's rater). This new requirement only was "recommended" under the old AR 623-205.

I asked the Human Resources Command (HRC) evaluation gurus to look at my rating proposal and give me feedback. Bottom line up front: they said that using the rating chain I suggested could lead to Inspector General (IG) complaints or NCO evaluation report (NCOER) appeals because the rating chain is not in accordance with AR 623-3. So, I must ask you to comply with the AR—not follow my proposed rating scheme.

That having been said, I believe the battalion CSM should rate the Master Gunner, when possible (mission dependent). I rate the Field Artillery Master Gunner and the Chief of Field Artillery is his senior rater. Of course, if the CSM rates the Master Gunner and the battalion commander senior rates him, then the NCOER will have to go outside the battalion for review. As part of empowering the Master Gunner, it might be worth it to institute that rating scheme, which complies with AR 623-3.

I stand behind the rest of my comments in the article, such as battalion commanders' selecting the right NCOs to be their Master Gunners—and not necessarily the most senior Military Occupational Specialty (MOS) 13B Cannon Crewmember or 13M Multiple-Launch Rocket System (MLRS) Crewmember sergeants first class (SFCs) in the battalions. I also am passionate about units "empowering" their Master Gunners.

As you know, due to the current fight, our Master Gunners are performing many other duties as Pentathletes in Afghanistan and Iraq—duties that are helping to make a difference in the War on Terrorism (WOT). However, staying current on their FA skill sets is challenging for them.

A student at the Master Gunner's Course in the FA School at Fort Sill, Oklahoma, learns to assemble and disassemble the M2 .50-caliber machine gun.

Our Master Gunners, as FA experts, are extremely important to the FA, especially now. Their ability to help FA units certify and qualify their personnel after redeploying is critical.

I apologize for any confusion I may have caused with my recommended rating scheme and thank the G1 for calling my mistake to my attention.

CSM William E. High
CSM of the FA, Fort Sill, OK

2007 Fires Seminar—5-7 June

"Artillery Strong: Evolving Fires"

The 2007 Fires Seminar will be held at the Reimer Conference Center in the Field Artillery School, part of the Fires Center of Excellence at Fort Sill, Oklahoma, from 5 to 7 June.

Tuesday, 5 June, will be a session for Army and Marine Corps FA and Fires brigade/regimental and battlefield coordination detachment (BCD) commanders and their command sergeants major (CSMs), fires (and FA) battalion commanders and their CSMs and division fire support coordinators (FSCOORDs).

The seminar then will kickoff on Wednesday, 6 June. Invitees from 5 June may attend the seminar. In addition, the following are invited: both Active and Reserve Component of the Army and Marine Corps Field Artillery (FA) and Army Air Defense Artillery (ADA) senior leaders and nominative CSMs plus other Army leaders, fires representatives from the joint community and allied representatives. Invitees will receive invitations via email soon.

The seminar ends at approximately noon on Thursday, 7 June. Thursday afternoon, representatives of the FA and ADA Schools will meet for a "Home-on-Home" about the consolidation of the FA and ADA Schools at Fort Sill.

As more information about the seminar becomes available, it will be posted on the Fires Seminar portion of the Fort Sill home page at http://sill-www.army.mil, including an email address.

History of FIELD ARTILLERY Magazine:

Pointing the Way to the Future

The following is the history of the professional magazine for Army and Marine Field Artillerymen from the first edition, January-March 1911, to this final March-April 2007 edition. The article is written in two overlapping parts: (1.) 1911 through 1987 taken from information written by then Major David T. Zabecki for the **Military Periodicals: United States and Selected International Journals and Newspapers** ***published by Greenwood Press in 1990.[1] and (2.) 1987 through 2007 by Patrecia Slayden Hollis, Managing Editor from 1987 to 1995 and Editor from 1995 to the present.***

Editor

By Major General David T. Zabecki and Patrecia Slayden Hollis

The first edition of the current *Field Artillery,* subtitled *A Joint Magazine for US Field Artillerymen,* was January-March 1911 under the title *The Field Artillery Journal,* affectionately referred to as *"FAJ."* The publication and parent organization, the US Army Field Artillery Association (USAFAA), were the consequences of the Artillery Reorganization Act of 1907, which split the US Army's Artillery into the separate branches of Field Artillery and Coast Artillery. Both the association and the *FAJ* were the idea of Captain (later Major General) William J. Snow, who saw a need for some vehicle through which the relatively tiny new branch (only 180 active-duty officers) could develop an identity.

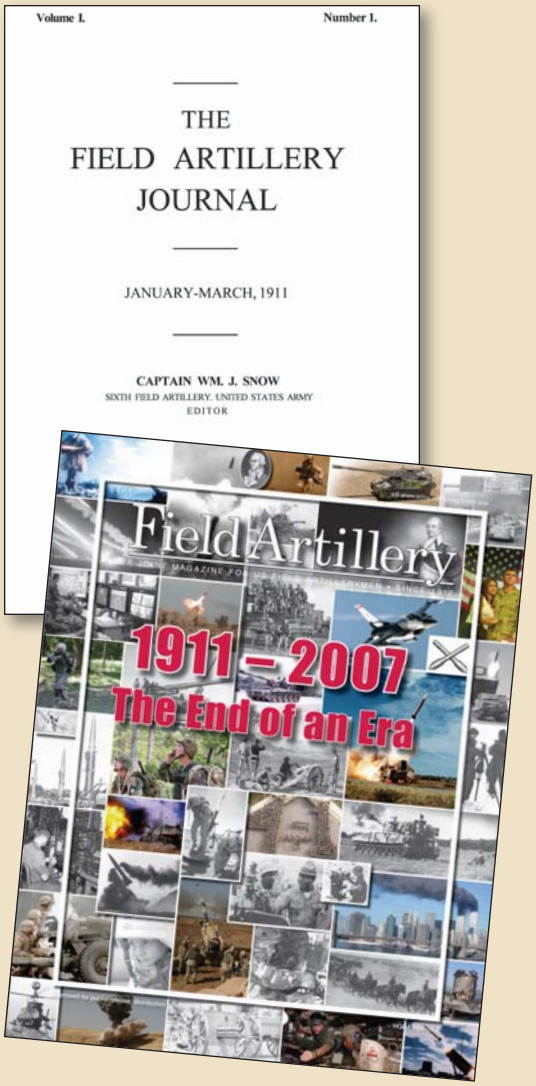
The new association and its journal had three main purposes: to disseminate "professional knowledge," promote "a feeling of interdependence among the different arms and of hearty cooperation by all" and "promote understanding between the regular and militia forces."[2] These purposes remain in the final edition as printed on the inside front cover of this magazine.

The second purpose—what currently is known as "combined arms" thinking—was fairly progressive for its day. But it was in the third purpose that *FAJ* was a real leader. Relations between Active and Reserve Components of the Army were shaky, at best, prior to World War I. The efforts of the *FAJ* to include militia participation broke new ground and resulted in favorable comment from other branch association journals.[3]

The first issue of the 1911 *FAJ* had Snow as the editor. Although only one of the articles in that edition carried his byline, he personally wrote all but two.[4] Between 1911 and 1950, *FAJ* had 19 editors, all but two of whom held the position on a part-time basis. (See the figure.) Some only served for a few months, but the average tenure during that time was about three years.

Vision for the Future. The early editions of *FAJ* were influenced heavily by French thought. Quite often, articles translated from French journals outnumbered pieces from American contributors. Prior to World War I, translated German articles also were used heavily.

Throughout the interwar years, FAJ had a fair degree of impact on contemporary military thinking. In October



Editor	Start Date	End Date
CPT William M. Snow	Jan 1911	Jun 1911
CPT Oliver L. Spaulding	Jul 1911	Dec 1912
CPT Louis T. Boiseau	Jan 1913	Jun 1914
CPT Marlborough Churchill	Jul 1914	Dec 1915
CPT John Nesmith Greely	Jan 1916	Feb 1916
LTC Dwight E. Aultman	Mar 1916	Mar 1917
COL Clarence Deems, Jr.	Apr 1917	Sep 1917
MAJ Claude B. Thummel	Oct 1917	Dec 1917
LTC Arthur F. Cassels	Jan 1918	Dec 1922
MAJ T. Worthington Hollyday	Jan 1923	Feb 1923
MAJ William C. Houghton	Mar 1923	Jun 1926
MAJ Harleigh Parkhurst	Jul 1926	Sep 1928
MAJ John M. Eager	Oct 1928	Dec 1931
MAJ Dean Hudnutt	Jan 1932	Sep 1936
CPT Michael V. Gannon	Oct 1936	Sep 1939
LTC Wilbur S. Nye	Oct 1939	Jun 1942
LTC John E. Coleman	Jul 1942	Dec 1945
COL Devere Armstrong	Jan 1946	Nov 1947
COL Brekinridge A. Day	Dec 1947	Jun 1950
MAJ Alan A. Word	Jun 1973	May 1976
LTC William A. Cauthen, Jr.	May 1976	May 1979
MAJ John R. Dobbs	Jun 1979	Oct 1982
MAJ Terence M. Freeman	Oct 1982	Jul 1984
MAJ Roger A. Rains	Jul 1984	Mar 1987
CPT Suzanne W. Voigt*	Mar 1987	Jul 1987
MAJ Charles W. Pope, Jr.	Jul 1987	Aug 1990
LTC Colin K. Dunn	Sep 1990	May 1992
LTC Jerry C. Hill	Jul 1992	May 1993
Patrecia Slayden Hollis*	Jun 1993	Sep 1993
LTC Robert M. Hill	Oct 1993	Dec 1994
Patrecia Slayden Hollis*	Jan 1995	Mar 1995
Patrecia Slayden Hollis	Apr 1995	Apr 2007

**Acting Editor*

***Field Artillery* Editors. This list is from the first edition, January-March 1911, until the last, the current edition.**

1918, Snow, by then a major general and Chief of Field Artillery, published a retrospective on American Field Artillery operations during the Great War that proved to be truly visionary in its projection of future warfare.

Bucking the traditional wisdom of the day, Snow maintained that the trench warfare of World War I had been a temporary aberration and that "open warfare" would characterize the conflicts of the future. For that reason, he concluded, Field Artillery training would continue to be geared toward supporting maneuver rather than static warfare.[5]

Two other articles also appeared in the interwar years that were significant for what was said as well as the fact that their authors would turn out to be major leaders in World War II. In 1937, Brigadier General Lesley J. McNair published an article on the newly emerging military applications of the helicopter.[6] And in 1941, Major Albert C. Wedemeyer presented an interesting article on antitank warfare. In his article published in the May 1941 edition, Wedemeyer, an Infantryman, stated, "The best *defense* against the lightning-like, destructive blows associated with modern warfare is the *offense*. Therefore, *tanks* and *planes*, with their recognized offensive powers, are the most effective means against armored forces and air units."[7]

Although the early *FAJ* accepted private advertising to defray costs, this was stopped by Congress in 1931, forcing the USAFAA to depend primarily on subscriptions and the sale of books, etc., for *FAJ* funding.[8]

FAJ's most important contributor was retired Redleg Colonel Conrad H. Lanza. Between 1921 and 1950, Lanza published 89 articles in *FAJ*. Most of them were historical or analyses of the current campaigns of World War II.

Starting in May 1942, Lanza also wrote a regular feature titled "Perimeters in Paragraphs." The column commented on significant diplomatic developments, summarized current military operations and occasionally made predictions. "Perimeters in Paragraphs" attracted a fair amount of attention during the World War II years. For example, Hanson W. Baldwin of the *New York Times* quoted Lanza in his column in the 4 December 1942 issue.

During World War II, *FAJ* was a central vehicle in what would become a high point in Soviet-American military cooperation. The November 1942 edition carried an article on antitank warfare written by Soviet Major General N. Gavrilenko. The article was written exclusively for *FAJ* through the cooperation of the Soviet embassy and transmitted from Moscow by radio. It was only the first of several such efforts. Between 1942 and 1946, 29 articles by Soviet authors appeared in the pages of *FAJ*.

FAJ's Russian connection came to an abrupt halt in 1947, however, when Soviet Deputy Foreign Minister Andrei Vishinsky branded the magazine as a "warmonger." A lead story in the 23 October 1947 issue of the *New York Times* explained that the attack on *FAJ* "was occasioned by an article regarding tactical exercises that did not name a possible enemy but gave Russian names to the cities involved."

FAJ subscriptions that had stagnated around 2,000 from 1920 through 1936 jumped to 3,000 in 1938 and 4,400 in 1940.[9] *FAJ* reached its all-time high circulation of 19,200 in 1943; but with the end of the war, circulation dropped off to only 5,000 by 1948.

Giving Birth to *Army* Magazine. In the late 1940s, there was a movement within the Army to eliminate internal bickering among the branches by merging the branch associations. Such an "all-Army" organization would present a united Army voice in an ambiguous era heralded by armed forces "unification." Moreover, this new body would publish a single ground combat journal using its pooled resources to support a full-time civilian staff.

The last edition of the original run of *The Field Artillery Journal* published by the USAFAA came in May 1950. The Field Artillery and Infantry Associations merged to form the Association of the United States Army (AUSA), and that body began publishing its monthly journal in August 1950. The new publication was called *Combat Forces Journal (CFJ)*, and its logo carried the subtitles *Infantry Journal* and *Field Artillery Journal*. It was presented as a continuation of those two magazines, and the initial full-time staff came from both of the predecessor publications.

The Honorable Harry S. Truman, the President of the US, was the Honorary President of AUSA. As a Field Artilleryman and Reserve colonel in the branch, he had been the Honorary President of the Field Artillery Association for several years.

The early editions of *CFJ* were a blend of its two branch predecessors with many of the regular contributors of the earlier journals continuing to present the same types of articles. Colonel Lanza continued his regular feature with the title changed to "World Perimeters."

Gradually, however, the scope of the new journal broadened, and the number of articles that related specifically to either the Infantry or the Field Artillery decreased. Then in 1954, *CFJ* dropped the *Infantry Journal* and *Field Artillery Journal* subtitles from its logo, and a few months later, its title was changed to *Army*. Meanwhile, all Army Artillery had been merged back into a single branch at the end of 1950.

Rebirth of the Journal. The rebirth of the magazine was a long and slow process. In 1957, the US Army Artillery and Missile School at Fort Sill, Oklahoma, started issuing a house-publication. By the fourth edition of the *Tactical and Technical Trends in Artillery for Instruction* issued in October 1958, the name was changed to *Artillery Trends* and remained so for 39 editions.

The name then changed to *The Field Artilleryman* in the April 1969 edition after the Army Artillery once more split into the separate branches of Field Artillery and Air Defense Artillery. In January of that year, the school had changed its name from the US Army Artillery and Missile School to the US Army Field Artillery School. The school printed eight editions of *The Field Artilleryman* as an "instructional aid, published whenever sufficient material is available."

Between 1957 and 1972, the school published 50 editions.

Throughout the late 1960s, most of the Army's branch schools had been pressing the Department of the Army (DA) for permission to publish branch periodicals on a regular basis. In 1972, DA finally gave permission. The last edition of *The Field Artilleryman* carried an appeal from Brigadier General Robert J. Koch, Assistant Commandant at Fort Sill, asking for reader support for a new Field Artillery professional journal.[10]

The first edition of the restructured *Field Artillery Journal* came out in July 1973 under the editorship of Major Alan A. Word. The revived publication picked up the numbering sequence from the old *FAJ* with Volume 41.

The first edition carried an article by Historian Fairfax Downey that provided an additional bit of continuity with the old *FAJ*. The main difference between the old and new journals was that the latter was an official Department of Defense publication rather than an association's magazine. The new *Field Artillery Journal* also had a full-time military editor and a small staff of civilian Army employees.

In his opening editorial, Word said he intended to publish the *Field Artillery Journal* "under the forum concept."[11] He and subsequent editors have stressed that *FAJ* was not an official voice of the Field Artillery School, although information from the school was an important part of most editions. Every editor since the rebirth has urged participation from the readership.

The new *Field Artillery Journal* carried over two key themes from *FAJ*: the continual stress on combined arms thinking and aggressive efforts to include the reserve components. The importance of this latter point is all too critical under the force structure of the times where more than 50 percent of the Field Artillery was either in the National Guard or Reserve.

In 1974, the Field Artillery Association was also revived as the Field Artillery Historical Association. Then in 1980, it became the US Field Artillery

Association (USFAA), dropping the word "Army" from its name in recognition of its Marine Corps Field Artillery members.

Although the association was no longer the parent body of the *Field Artillery Journal*, a close tie continued to exist in the person of the editor, who also served as the association's executive director. USFAA bought copies of the government's printing of the *Field Artillery Journal* for its members.

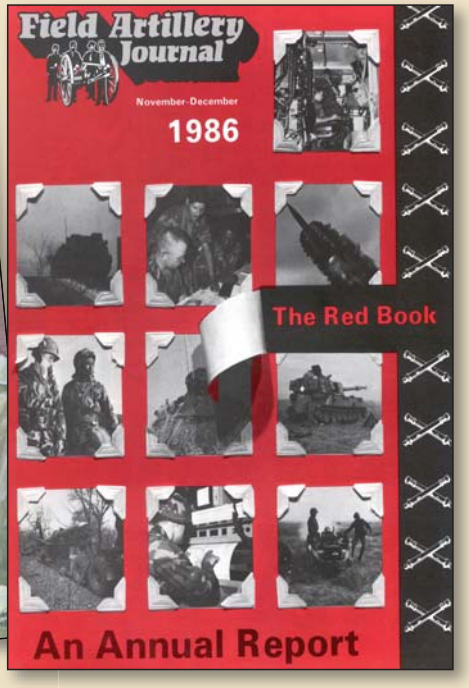
It took some time before the *Field Artillery Journal* evolved into the "forum" its editors envisioned. Occasionally there were criticisms from readers that the *Field Artillery Journal* was "an excellent info sheet but no forum."[12] Editors Major John R. Dobbs and Major Terrence M. Freeman slowly expanded the Letters-to-the-Editor section by printing some of the shorter and more thoughtful articles as letters instead. Although this angered some contributors who felt their efforts were downgraded when printed as letters, the foundations of an effective forum did develop.

Brady Collection (LC-B8171-435), Library of Congress

"The Cocky Field Artillerymen." This famous Civil War photo of a group of Yankee Artillery officers standing in cocky positions around an M1861 three-inch Ordnance Gun was taken by James F. Gibson near Fair Oaks, Virginia, in June 1862. It was used in the front cover logos of the magazine, starting with the September-October 1979 *Field Artillery Journal* and ending with the January-February 1996 *Field Artillery*.

Changes in the Magazine. By the end of 1986, the *Field Artillery Journal* was facing its old nemesis, the government budget ax once again. It was one of 41 publications recommended for elimination by the Army Publications Review Committee. The Commanding General of the Army Training and Doctrine Command (TRADOC), however, decided to let the branch magazines survive in the "more economical bulletin format." Starting with the August 1987 edition, the *Field Artillery Journal* made changes to comply with the TRADOC regulations for funding by the Deputy Chief of Staff for Doctrine.

The magazine became *Field Artillery* with the subtitle of A *Professional Bulletin for Redlegs* and eliminated all information that was purely editorial, public relations or personality profiles (in the latter, except for people of historical significance) and made other changes. Most of the changes were to make the magazine cheaper for the Army to publish, such as limiting the use of coated paper, color, photographs, etc. (In the early 2000s, the various branch bulletin editors slowly reinstated all the economical changes as technological advances in desktop publishing software and printing made the additional costs of printing, say, photographs, inconsequential and covers limited to black and white with one additional color internationally antiquated.)



One change that TRADOC directed was a standard professional bulletin (PB) numbering system, which remains today. The system changed from *FAJ*'s volumes and numbers to (on the front cover of this magazine) "PB6-07-2," which stands for "Professional Bulletin 6" (the FA's designated number); the year (2007); the number of the edition for that year (2).

In the 1980s, many *Field Artillery Journal* articles dealt with the problems derived from rapidly evolving technology and its impact on military doctrine, a trend that continued with *Field Artillery*. To support the AirLand Battle

warfighting doctrine, Artillery thinking had to shift from the traditional mission of massing fires over a wide front to shooting deep to extend the depth of the battlefield.

In addition, the new doctrine called for mobile armored warfare to move rapidly to outflank the enemy and (or) take advantage of his vulnerabilities. The magazine published a controversial article in 1988 that was co-authored by then Lieutenant General Crosbie E. Saint, the III Corps commander, and then published an interview with him later that year. In both pieces, General Saint advocated the FA be capable of moving rapidly with the lead elements of the armored strike force to destroy the enemy. This flew in the face of the FA School's concept that the FA should remain relatively stationary and support the maneuver forces with fires massed where the maneuver commander wanted them.

Once again, *Field Artillery* pointed the way to the future. Less than three years later in March 1991, the FA moved with the lead elements of rapidly moving maneuver formations to outflank and surprise the Iraqi forces during Operation Desert Storm (ODS)—the wartime application of AirLand Battle.

The 72-page September-October 1991 edition had the theme of "Redlegs in the Gulf," and was the first of the Army branch magazines to chronicle the events of ODS in detail in an entire edition. The magazine was in print just five months after the March 1991 war. *Field Artillery*'s being the first of the branch magazines to chronicle the war in an entire edition would repeat itself for Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF).

Theme Editions. In 1985 under Major Roger A. Rains, editor of the *Field Artillery Journal*, and then continued by Major Charles W. Pope, editor of *Field Artillery*, the magazine moved to a theme issue concept. Each edition concentrated (although not exclusively) on a topic, such as counterfire, the FA and combat service support, and massing fires.

The earlier themes tended to cover FA firing operations and the desired effects. Then as time progressed, the themes moved more into covering fires in joint and combined operations, digitizing the force, other new technologies and, finally in the early 2000s, into nonlethal effects and stability operations.

The September-October 2002 magazine focused on Operation Anaconda in Afghanistan, the first major military operation of the Global War on Terrorism (GWOT). In a highly controversial interview, the commanding general of forces in Operation Anaconda, then Major General Franklin L. Hagenbeck, criticized the Air Force for the quantity and timeliness of the Air Force's close air support (CAS). The controversy brought the magazine considerable international media attention and the Air Force and Army to the table to fix major problems with CAS rapidly before OIF.

After the interview and other controversial articles on Operation Anaconda were published in 2002, the magazine gained a wider Air Force readership that noted the fire support aspects of the Field Artillery's mission for the ground forces in OEF and OIF. Also, significantly more articles by Air Force authors began appearing in the magazine—articles on providing ground forces airpower, especially CAS.

Throughout the editions in the late 1990s and early 2000s, the magazine's sub-themes were related to killing the enemy deep to keep from having to kill him up close, developing fire support capabilities to kill targets reliably in the close fight and prosecuting integrated joint operations. Once again, the FA developments and magazine discussions held the branch in good stead for combat, this time in Iraq. At the beginning of OIF, Field Artillerymen helped the Air Force prep the battlefield deep before Coalition Forces crossed the line of departure, firing more than 400 Army tactical missile systems (ATACMS), including some ATACMS unitary missiles, the first FA precision-guided munitions (PGMs) fired in combat. Field Artillerymen also provided close fires while moving rapidly with the lead elements of the ground forces.

The theme approach ended in 2004 when Patrecia Slayden Hollis, the magazine's only civilian editor, stopped the practice to focus all editions on OIF and OEF for the nation at war. Hollis was the second woman editor (the first's being Captain Suzanne W. Voigt who was the Acting Editor for four months in 1987) and the longest serving editor of the magazine. Hollis was the editor for more than 12 years, from 1995 through the last edition in 2007. Prior to her editorship, the longest serving editor had been Major Dean Hudnutt, who was the editor for three years and nine months from 1932 to 1936.

The Red Book. From 1986 until 2000, the last edition of each year was called "The Red Book," an annual report of the state of the American Field Artillery, which included unit reports, maps of joint FA units worldwide and other reference information. It was similar in concept and format to *Army's* annual "Green Book."

With the 1987 edition under Editor Pope, the Red Book changed from an annual report for only Army Field Artillery active duty officers to a more inclusive report for

Army and Marine Corps Field Artillery officers, NCOs and enlisted men, both Active and Reserve Components. This continued the magazine's tradition of including its Reserve Components and endorsed the branch's joint partners, the Marine Field Artillerymen.

With the 1998 Red Book state-of-the-branch article, the vision for *Field Artillery* gave voice to the focus on joint operations with munitions centrality, the age of effects, digital connectivity and deep fires. These concepts laid the groundwork for the development of systems and employment concepts for OIF.

After the 2000 November-December edition, the Red Book was published every other year. Even in the odd years in which the Red Book was not published, the Chiefs of Field Artillery continued to publish annual state-of-the-branch articles.

By the 2006 Red Book, the Army had imposed so many operational security (OPSEC) publication restrictions due to OEF and OIF (not allowing the magazine to publish the commander's list or unit reports) that the Red Book became a mere token of previous Red Books.

History Writing Contest. The magazine also reflected the renaissance in military history in the US Army. From 1986 through 2003, roughly 15 percent of the articles were historical with the emphasis on "lessons learned" that apply today.

During that time, the USFAA sponsored an annual history writing contest run by the magazine staff. Two of the history contest winners won the prestigious Army Historical Foundation's national award for Best Army Professional Journal History Articles for 1998 and 2001; in addition, the foundation selected several other USFAA history writing contest winners as finalists over the years.[13]

Then in 2004, Hollis temporarily suspended the contest due to lack of participation. From 1986 through 2003, authors had supported the annual contests with multiple entries. However by 2004, as the articles and interviews indicated, a large part of the Army and Marine Corps Field Artillerymen were deployed, recovering from a deployment or preoccupied with preparing to deploy again for OIF or OEF, which limited their participation in the contest.

Interviews—National and International. From 1987 through 2006, the magazine published frequent interviews with senior Army, joint and allied leaders; also, several junior NCOs were interviewed for the series "A Soldier's Story." More than 90 interviews were published in *Field Artillery* during that time, the vast majority of which were conducted by Managing Editor and then Editor Hollis. During that time, the focus was on the magazine's providing "something for everyone" with the readership target of E6 though general officer.

Although the interviews covered FA operations and developments, the interviewees discussed them within the broader context of overall Army, joint and combined operations, including ODS, OIF and OEF, drawing a broader audience. As a consequence, the interviews often were quoted or reprinted in manuscripts and other magazines or publications, such as the Pentagon's *Early Bird*, and used extensively in research.

Dual Magazines: *Field Artillery* and the *FA Journal*. In the early 1990s, Congress passed an ethics in government law limiting, among other things, private organizations from benefiting from government contracts or activities—separating "church and state." This had a great impact on the magazine and the association.

The law spelled out strict rules for "conflicts of interest," which restricted the active duty editor from also serving as the Executive Director of the association and caused the Chief of Field Artillery to maintain his distance from the association. During that time, the USFAA replaced its active duty military board members with retirees.

In 1996, the final legally driven separation of the government's magazine staff and the private Field Artillery Association came with the March-April edition. With that edition, the association discontinued buying copies of *Field Artillery* from the government and started printing a separate version of the magazine for its members, called the *FA Journal*, subtitled *A Professional Journal for Redlegs*.

The professional content of the *FA Journal* was a reprint of *Field Artillery* (provided by the government magazine staff to the association on CD); the *FA Journal* also included commercial advertising and association news. The new magazine sported full-color covers and heavier coated paper with a crisper printing of photographs and art—all prohibited by the Army in the name of economy.

By 1998, the circulation of *Field Artillery* and the association's *FA Journal* was about 15,000 per edition, with each providing half.

The November-December 2003 edition of *Field Artillery* moved into full recognition of the joint nature of the magazine. Hollis changed the subtitle of *Field Artillery* from *A Professional Bulletin for Redlegs* to *A Joint Magazine for US Field Artillerymen* on behalf of the Marine Field Artillerymen readers. About the same timeframe, the USFAA changed the FA Journal's subtitle to *A Joint Journal for US Field Artillerymen*. The titles remain through this last edition.

Keeping Up with Publishing Technology. *Field Artillery* has been innovative in its use of publishing technology. In 1992, Editor Colin K. Dunn moved the magazine away from camera-ready mechanicals (hard copy layout) to digital layout of the magazine, with the exception of photographs and some art that had to be developed and positioned by the print contractor.

Hollis continued the movement toward more advanced technology in publishing and distribution. By the May-June 1995 edition, the magazine was laid out entirely electronically with print contractor's receiving it on a CD.

Today, the printer receives the magazine in a pdf format that the magazine staff uploads electronically to his file transfer point (FTP); the edition is developed to allow the printer to go directly to the presses and output to film, skipping the plate-making stage of the printing process.

In the late 1990s, the magazine started an electronic home page with an archive of editions online from the latest edition back to those in 1959. Today, the magazine's home page has an archive of "Past Editions" back to 1959 that are searchable by a Google Mini device. By June 2007, the archive will have all editions online back to 1911. The archive is at sill-www.army.mil/famag/index.asp.

Posting the magazine online led to new era of global coverage that continues today. As an example, an online article about the Battle of Fallujah that was printed in the March-April 2005 edition caught the eye of the anti-American media and provided "grist" for a 2006 international negative "spin" campaign. The media used one paragraph in the article as proof that the US had

employed white phosphorous (WP) in the battle and decried erroneously that WP was a chemical weapon and banned internationally. Once again, the magazine came under the eye of a media storm with national and international queries—this time because of the media's distortion of information posted online.

Today, the print circulation of the dual magazines is about 12,000, with 7,600 free copies going to Army and Marine Corps Field Artillery units and various other US government agencies. The remaining 4,400 printed copies are distributed as part of the USFAA's membership benefits.

The 1980s magazine staff maintained an estimate of its "readership," based on the limited numbers of printed copies going to units, libraries and other organizations and an assumption that the copies had more than one reader. With 90,000 copies printed in 1986, the staff calculated the magazine had a readership of about 250,000.

Today, it is more difficult to estimate the number of magazine readers. In spite of the fact that only 72,000 copies are printed, the magazine is online on its home page and in multiple research and reference databases. As one example, in the past five and one-half months, the magazine's home page has received an average of 238 "hits" per day—some 42,400 readers in less than six months.

The Final Editions. During the 2000s, the magazine covered not only advances in technology, but also the changes to FA and Army units to become more modular and transform into a future combat system (FCS) force. In one breakthrough of technology, *Field Artillery* covered the FA's new PGMs and new software to support precise target location in its July-August 2006 edition. These PGMs and the supporting targeting software, including innovations in digital clearance of fires, are changing the face of kinetic effects in counterinsurgency operations in Iraq and Afghanistan, especially in the urban areas. Along with Air Force PGMs, ground force commanders now can access an unprecedented range of capabilities in precision kinetic effects, truly revolutionizing ground warfare.

Since OIF began in 2003, the magazine also has printed articles on Field Artillerymen serving in GWOT as motorized infantryman and commanders of motorized infantry task forces or brigades, as information operations (IO) and civil military operations (CMO) officers at the tactical levels, and as lethal and nonlethal effects coordinators at all levels. FA fire supporters in GWOT routinely coordinate and integrate nonlethal effects as well as the more traditional lethal effects.

As *Field Artillery* ceases publishing, its proud history boasts of having recorded the movement of the branch from focusing on Field Artillery firing operations to fires in combined arms operations to fires and effects in joint and combined operations across the spectrum of conflict, including counterinsurgency and stability operations.

The last several years of *Field Artillery* editions have discussed the consolidation of branch schools in centers of excellence, including the potential to re-merge the FA and Air Defense Artillery branches; FA Soldiers and leaders serving the Army as multi-capable Pentathletes in full-spectrum GWOT operations; the overriding emphasis on integrating joint fires and effects in GWOT, including developing joint fires observers (JFOs) and joint terminal attack controllers (JTACs); the restructuring of the force to make FA organic to the maneuver brigade combat teams (BCTs); and the beginning of Field Artillerymen's and Combat Engineers' eligibility for selection to command BCTs.

Historically the magazine's contents have pointed to the future of the FA and the Army. So, based on articles since 2000, what might the future look like?

Additional References for *Field Artillery*

- Lester L. Miller, Jr., *Index* to The Field Artillery Journal: *Author and Subject Index January 1940-December 1986*, 3 volumes (Fort Sill, OK: US Army Field Artillery School, 1977-1987).
- Carl H. Schofield "History of *The Field Artillery Journal, 1911 to 1949*," Master's Thesis, University of Missouri, 1950;
- Morris Swett, *Reader's Guide* to The Field Artillery Journal: *Author and Subject Index January 1911-December 1939* (Washington, DC: *The Field Artillery Journal*, 1940).

Endnotes:

1. Michael E. Unsworth, Editor, *Military Periodicals: United States and Selected International Journals and Newspapers*, (New York, NY: Greenwood Press, 1990), 94-99.
2. William J. Snow, "United States Army Field Artillery Association," *The Field Artillery Journal* (hereafter cited as *FAJ*) (January-March, 1911), 7-9.
3. Editorial, *Journal of the United States Cavalry Association* 21 (July 1910), 170-172.
4. Snow, "Sketch of the Origin of the Field Artillery Association," *FAJ* 22 (July/Aug. 1932), 536.
5. Snow, "Field Artillery—A Retrospect," FAJ 9 (October-December 1918), 477-479.
6. Lesley J. McNair, "And Now the Autogiro," FAJ 27 (January-February 1937), 5- 17.
7. Albert C. Wedemeyer, "Antitank Defense," FAJ 31 (May 1941), 258-272; quote from 271.
8. Major Alan A. Word, an unpublished manuscript, "*FA Journal* Goals," 1975, 1.
9. Ibid, 2.
10. Robert J. Koch, "A Message from the New AC," *The Field Artilleryman* 50 (October 1972), 1.
11. Word, Editorial, *Field Artillery Journal* 41 (July 1973), 1.
12. Roland P. Shugg, a Letter, *Field Artillery Journal* 52 (January-February 1986), 11.
13. See the editorial piece "*Field Artillery* History Author Wins National Award," *Field Artillery* (July-August 2001), 33.

Major General David T. Zabecki, a US Army Reserve Field Artilleryman, is the US Army Europe's (USAREUR's) Deputy Chief of Staff for Mobilization and Reserve Affairs in Heidleberg, Germany. Previously he was the Commanding General of the Southern European Task Force (SETAF)-Rear in Vicenza, Italy. He also served in Israel as the Senior Security Advisor on the US Coordinating and Monitoring ("Roadmap") Mission. In the 1980s and 1990s, he was a frequent contributor to *Field Artillery* and won several History Writing Contests. He holds a Ph.D. in Military History from Britain's Royal Military College of Science at Shrivenham, England, and is the author of seven history books. General Zabecki retires in August 2007.

Patrecia Slayden Hollis has been the Editor of *Field Artillery* since April 1995 and served as the Managing Editor from October 1987 until March 1995 at Fort Sill, Oklahoma. In her previous job, she taught Communication Skills in the Field Artillery Captain's Career Course at the FA School, Fort Sill, Oklahoma. She also taught Freshman English at Park College, Parkville, Missouri; was a technical writer for the Training Extension Course (TEC) Program at Fort Eustis, Virginia, and served as a news reporter for the morning and evening editions of the Lawton Publishing Company, Lawton, Oklahoma, winning four state writing awards. She holds an MA from George Washington University in Washington, DC. She retires in July 2007.

Troubleshooting the Gunnery Solution —A Leader STX

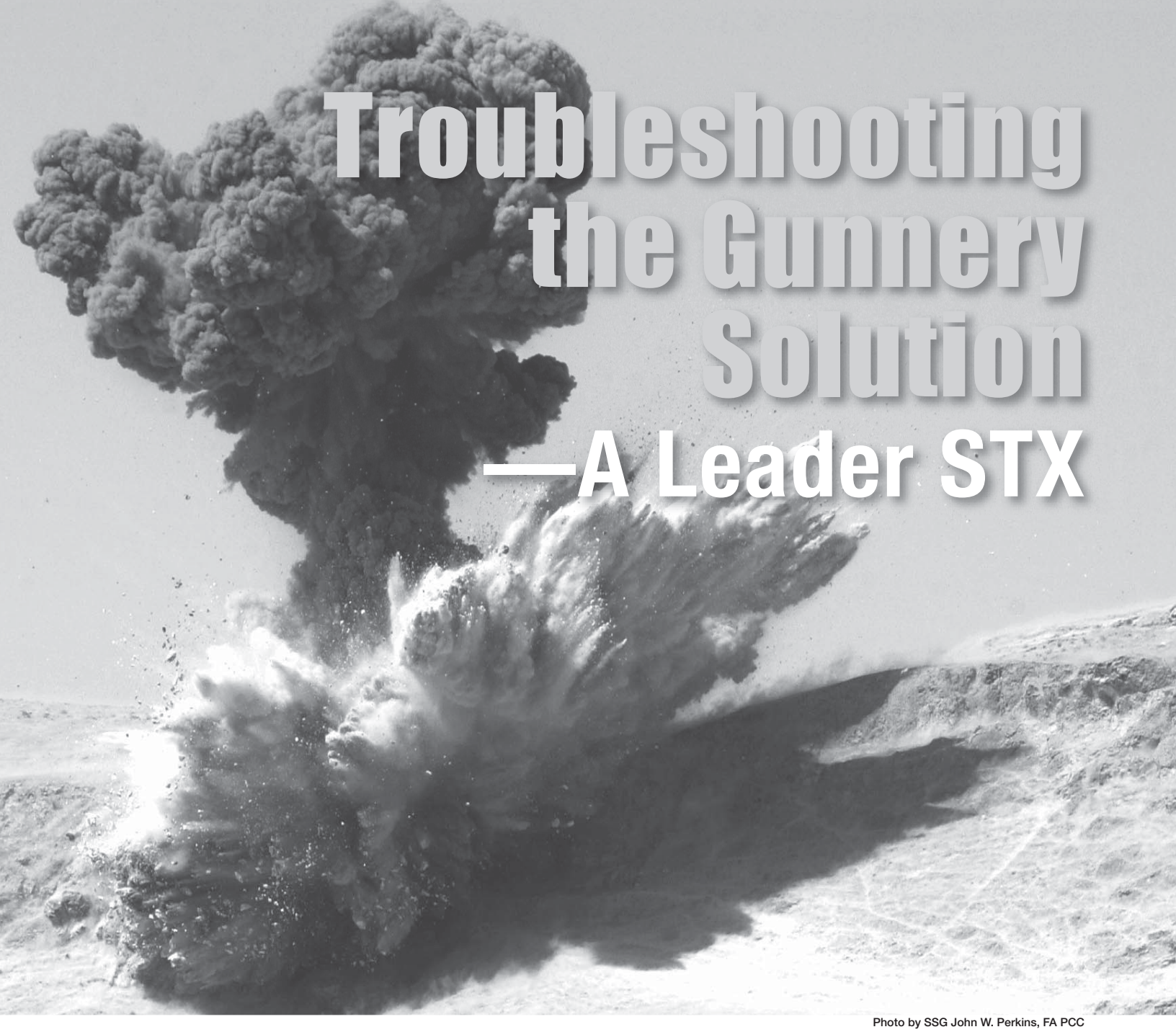


Photo by SSG John W. Perkins, FA PCC

By Colonel Kevin M. Batule

Field Manual 6-40 Field Artillery Manual Cannon Gunnery has been recognized widely by the Army and Marine Corps as the training publication with clear and uncontested truth about meeting the requirements for accurate predicted fires. Surprisingly though, this manual (last updated as a multi-service manual in October 1999) tells Field Artillery leaders *nothing* about how to troubleshoot problems in firing accuracy.

As the adage that "no plan survives first contact with the enemy" is true, so also is that "no firing battery always hits the target." The need to isolate, detect and solve firing inaccuracies by practicing a gunnery troubleshooting discipline is an absolute imperative for FA and fire support professionals.

For several years now, the Field Artillery School at Fort Sill, Oklahoma, has been teaching troubleshooting methods in the classroom. These methods are "math drills" to capture database errors or correctly compute an answer, given some formulas on a dry-erase board. It has proven useful for students who are keenly attuned to manual gunnery procedures from recent experience but not for those out of practice.

However, Field Artillerymen have been returning to the FA Captain's Career Course (FACCC) and other professional military education (PME) courses, such as the FA Pre-Command Course (PCC), in large numbers with little or no recent live-firing experience. The need to "refresh" through practical exercise and live fire is paramount.

"Reset" of Field Artillerymen. Recognizing this atrophy in core FA competencies, such as gunnery, the Commandant of the Field Artillery School identified Reset ("Re-Red" Artillerymen) as his highest priority. The FA School now is implementing initiatives to help Reset basic leader FA skills in officer and NCO career courses.

Correcting this "skill-atrophy" trend only may require minor alteration of the methods and types of instruction at Fort

Sill. Considerable thought also has been given to adding live fire and more field training back into selected sections of these courses to address the degradation in supervisory gunnery skills. Hence, the 428th FA Brigade (until recently Fort Sill's school brigade, known as the 30th FA Regiment) began an experiment in October of 2006 with PCC—a *situational* training exercise (STX) for gunnery troubleshooting.

Gunnery Troubleshooting STX. PCC prepares FA lieutenant colonels and colonels for positions as battalion and brigade commanders. In most cases, these leaders are the senior FA officers responsible for FA live-fire certification, safety and skill proficiency. Not surprisingly, many have been conducting full-spectrum operations and, for the most part, have not been conducting traditional FA and (or) fire support during the current War on Terrorism (WOT).

They require (and desire) an opportunity to review the five requirements for accurate predicted fires, but more importantly, an opportunity to ensure they can train their units to meet them.

The STX presents exactly what these leaders need in Reset—an opportunity to observe, detect and correct firing inaccuracies. This troubleshooting field STX is an efficient and visual way to hone supervisory skills that have remained dormant and unpracticed.

The STX is suited ideally for the future battery commanders attending the career course. This 90-minute module is nothing more than the classroom gunnery troubleshooting lesson taken to the field. The simple beauty of it is that each mission fired provides an opportunity to reinforce the causes of inaccuracies and troubleshoot the errors, detecting and isolating the cause of the errors, while observing and inspecting all elements of the gunnery team. See Figure 1 for questions supervisors ask to detect and isolate the causes of gunnery errors.

Ask the Following Questions:
- Is it affecting my entire battery?
- Is it affecting just one gun?
- Is it a range error?
- Is it a lateral error?
- Is it a range and lateral error?
- Did the solution solve the *entire* problem?

Figure 1: Gunnery Troubleshooting Guide. Ask these questions to detect and isolate the cause of the error while observing and inspecting all elements of the gunnery team.

Coaching and mentoring how to train on solving the gunnery solution is a perishable skill. Practice with live rounds or simulation refreshes this skill. Further, few would question how critical it is that senior FA leaders understand this discipline to ensure it continues correctly in their units at all levels. Although a review of *FM 6-40* and a few PowerPoint slides present a nice academic recap of principles, there is no substitute for actual (or simulated) firing to properly reinforce FA gunnery—for FA commanders, FA NCO supervisors, fire support officers (FSO) and others.

The concept for this STX is simple. In a field environment, students observe firing inaccuracies, assess their causes and determine how to correct them. After an initial effective, accurate battery volley, the instructor introduces leaders to four teaching missions of inaccurate fires—each one prompting the students to evaluate routine causes of inaccuracies at the gun or fire direction center (FDC). The STX uses a Gunnery Troubleshooting Job Aid, depicting the causes of lateral, range and combination errors in the target area, to review the types and sizes of errors resulting from failing to account for certain elements of data. See the job aid in Figure 2.

One Gun Range Error. One of the more common errors manifested in the target area is a simple range error for one gun due to an incorrect charge. In that case, Mission #1, a battery volley (four guns, in this case) looks like Figure 3.

Although some would contest that a charge error is not a very frequent occurrence in training, the frequency of missions during Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) in Afghanistan has forced units to deliver many rounds at significantly different ranges, employing multiple charges simultaneously, substantially increasing the likelihood of charge errors.

More importantly, the charge error is an excellent opportunity to use the tabular firing table (TFT) to examine the magnitude of an error and whether or not the range error exhibited is due to an incorrect charge. In the Figure 3 example, it appears that one gun (the firing unit directly below and behind the observation post) has fired significantly "long." The first two questions in Figure 1 isolate the error to one gun—the first requirement for the supervisor to begin troubleshooting the cause.

By employing a "right-by-piece" command, determining which gun fired the error is easy. The development of Mission #1 also presents an opportunity for the instructor to "coach" the students to the proper gunnery command.

Using the TFT and extracting the range associated with an elevation from the next higher charge enables the student to compare that range with the range to the target (announced by the fire direction officer, or FDO). If the difference between the two ranges is equivalent to the observed error in the target area, then the error is most likely an incorrect charge fired by one gun.

In this particular case, there are at least two other conditions that can cause

Errors by:	Range Errors Caused by Errors in—	Lateral Errors Caused by Errors in—	Range and Lateral Errors Caused by Errors in—
Battery	• Site • Square Weight • Air Temperature • Meteorological (Met) Station Height	• Azimuth of Lay (AOL)	• Target Location • Observer Location /Direction • Orienting Station • Met Data • Wind Speed • Wind Direction
Individual Pieces	• Charge • Quadrant Elevation • Propellant Temperature	• Deflection Fired	• Gun Location
Battery and (or) Gun	• Muzzle Velocity Variations (MVVs)		

Figure 2: Gunnery Troubleshooting Job Aid

Figure 3: Range Errors of One Gun. One of the most common causes of one gun's having a range error is an incorrect charge; however, quadrant elevation and propellant charge also can cause range errors.

range error on an individual piece, as noted on the Gunnery Troubleshooting Job Aid in Figure 2: quadrant elevation fired and propellant temperature. The job aid not only focuses the supervisor on the specific conditions to look at to isolate the cause, but also categorizes them by individual piece, battery or both. It is possible that the range error was produced by a large error in the quadrant elevation fired, so the supervisor must determine whether or not that was the cause.

As before, this line of investigation presents an opportunity to coach students on how to ascertain this information without even stepping off the hill. The executive officer (XO) or chief of firing battery will ensure that the correct quadrant is reported—the answer obviously helping to determine if the error was due to an incorrect elevation set on the howitzer's elevating mechanism.

But, before a supervisor can move on, he must be absolutely sure this range error in one gun was not caused by an error in propellant temperature, another possibility listed on the job aid. Again, the learning point of Mission #1 allows the instructor to review basic principles of how propellant temperature affects the muzzle velocity of the round and, subsequently, the range of the projectile. Generally, warmer propellant causes a higher muzzle velocity if all other conditions remain the same.

Based on this principle and an evaluation of Tables E and F of the TFT, the student also can examine what muzzle velocity would be produced and if this would correspond to the magnitude of the error observed in the target area. Generally speaking, it requires a very large error in propellant temperature to produce small errors in range along the gun-target line.

One Gun Lateral Error. Mission #2 reinforces another element of the gunnery troubleshooting discipline—the lateral error. In the Figure 4 example, one round is errant and is a significant lateral error to the left. By reviewing the job aid, students isolate this error as a "deflection fired" problem.

Once again, the situation facilitates a discussion about errors on the gun that produce a lateral error as well as what rule guides evaluating deflection errors either right or left. Gunnery supervisors must have a solid understanding of the "LARS" rule (left add, right subtract). Consequently, the observed error well to the left of the target would have to have been caused by a much higher deflection (an "add" to the left) than should have been fired.

In the example, the deflection fired was reported as 3141. The deflection that should have been fired was 3114 (transposed digit in the last two digits). The error in meters on the ground can be further determined by multiplying that difference (27 mils) by the gun-to-target range in thousands (3.0), yielding a total error of 81 meters.

An experienced observer easily can assess whether or not 81 meters is equivalent to the observed error in the target area. If true, then the supervisor has accounted for all of the errors produced.

Battery Range and Lateral Errors. Using a similar approach, Missions #3 and #4 reinforce the range errors resulting from incorrectly applied muzzle velocity variations (MVVs) and a lateral error for the entire firing unit. These missions also allow the instructor to coach his students, prompting discussions about the proper questions to ask to isolate errors and to use the job aid to determine the cause of the errors.

This 90-minute live-fire STX has been executed four times this fiscal year with each hands-on iteration's receiving enthusiastic praise. It also has been varied slightly by bringing the Basic Officer Leader Course (BOLC) III and FACCC students in to produce an integrated and invigorating leader training period. It likewise invokes informal coaching at all levels of participation.

While more appropriately focused at FACCC students, this STX already has proven its merit as a part of the overall FA School Reset strategy. It is scheduled for incorporation into the revision of the FACCC by July.

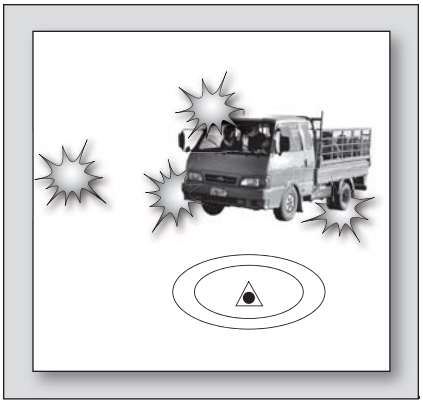


Figure 4: Lateral Error by One Gun. By reviewing the Gunnery Troubleshooting Job Aid in Figure 2, one can determine the error is due to the deflection fired.

If units or leaders not attending courses where they can experience the Gunnery Troubleshooting STX have questions or would like more information on the training, they can contact the Officer Instruction Group of the 1st Battalion, 30th Field Artillery, Major Todd Perry at todd.peery@conus.army.mil or call him at DSN 639-1565 or commercial 580-442-1565.

Resetting (or Re-Redding) Field Artillerymen, rightfully, is a priority to ensure Redlegs can execute FA fires for ground force commanders, when and where needed, during future full-spectrum military operations. Troubleshooting gunnery problems in live fire or simulations is a critical factor in FA Reset.

Colonel Kevin M. Batule commands the 428th Field Artillery Brigade, formerly known as the 30th Field Artillery Regiment, FA School, Fort Sill, Oklahoma. Previously he was a National Security Fellow at the John F. Kennedy School of Government at Harvard University. He commanded the 2nd Battalion, 320th Field Artillery (2-320 FA), 101st Airborne Division (Air Assault), deploying the battalion for Operation Iraqi Freedom (OIF) and participating in combat operations in Najaf, Karbala and Hillah, followed by stability operations in Mosul. He served as a Gunnery Instructor for two years in the FA School and, in the 101st Division, as the Assistant Fire Support Coordinator and Brigade Fire Support Officer (FSO) in the Division Artillery and S3 and Battalion Executive Officer (XO) in 2-320 FA. In 1-37 FA, 172nd Light Infantry Brigade at Fort Wainwright, Alaska, he served as the Assistant S3.

RESET—

Rebuilding FA Core Competencies for Future Full-Spectrum Operations

Gunners of A/2-17 FA (2nd BCT, 2nd Infantry Division), attached to the 1st Cavalry Division, prepare to load the M119 105-mm howitzer during a live-fire exercise at Forward Operating Base Loyalty in Baghdad. Photo by SSG Bronco Suzuki

By Lieutenant Colonel
Loyd A. Gerber

Attention to detail and technical competence always have been the hallmarks of the Field Artillery branch. However in the War on Terrorism (WOT), FA units have performed a wide variety of missions, arguably more than any other branch.

Initially in WOT, the FA conducted missions using its core competencies. Beginning with the ousting of the Taliban in Afghanistan to entering Baghdad and removing the Saddam regime, units have performed their primary mission of synchronizing the integration of all fires to support maneuver and delivering timely and accurate cannon and missile fires.

But things have changed since the initial phases of those campaigns. In the almost four years since entering Baghdad, FA units and personnel have performed a myriad of nonstandard missions, including being assigned areas of operations (AOs) as infantry task forces; providing training oversight to Iraqi Army, police and border police units; providing convoy security; performing base defense force operations; providing personnel for military training teams (MiTT)—and more. Field Artillerymen have performed these nonstandard missions and performed them well—a tribute to FA Soldiers and leaders.

While there are benefits that come with deploying to perform these missions (such as leadership skills developed to their fullest), there are costs. Soldiers performing these nonstandard duties have difficulty maintaining proficiency in their primary duties as Field Artillerymen and fire supporters.

The easy answer to this problem is "Conduct sustainment training." But that assumes units in WOT have

enough time to conduct the training and have experience performing the tasks in their core competencies so "sustainment" training will be all that is necessary. In fact, many of our most junior Soldiers and officers have not performed their core competencies since leaving their initial FA training courses because of the high operational tempo (OPTEMPO) of deployments in WOT.

Degradation Documented. Beginning in 2005, the FA School, Fort Sill, Oklahoma, saw the impact of degraded core competencies in the officers returning to attend the FA Captain's Career Course (FACCC). The school's survey of the FACCC students revealed that more than 90 percent of these officers had not participated in qualification-table training. Additionally, more than half had *not* been involved in the execution of a live-fire mission since their FA Officer Basic Course (OBC) or FA Basic Officer Leader Course III (BOLC III).

Instructors had to provide remedial training to get the students to a level of proficiency to complete the course. Some may say, "Well, that's the instructors' *job*." But the question follows: "How much good will the remedial training do if the young officer goes to a unit and trains for and deploys to conduct nonstandard missions several more times?" The lack of experience-based knowledge is creating a "bubble" in the career progression of officers and NCOs.

As awareness of this issue surfaced, the FA School began to look for ways to address it in its instruction. One of the first initiatives was the "Rapid Redesign of the FACCC," incorporating more situational-based practical exercises on not only counterinsurgency tasks, but also FA core competencies. (See the article "Rapid Redesign of FACCC: A Four-Week Process for Updating Courses for an Army at War" by Major Robert A. Krieg in the July-August 2006 edition.)

In July 2006, the Vice Chief of Staff of the Army tasked Training and Doctrine Command (TRADOC) that then directed the FA School to assess FA junior officers, given the mission to execute FA core tasks or assigned in other-than-FA-specific missions during Operations Iraqi Freedom (OIF) and Enduring Freedom (OEF). The survey was to determine if they had degraded basic branch skills and needed additional or refresher branch training. Using the survey of the officers in FACCC and survey sent to commanders in the field, the school determined that the skills of junior officers in fire direction, fire support and weapons-specific leadership were adversely affected. More importantly, it was apparent that core competencies of Field Artillerymen of all ranks performing nonstandard missions were affected.

The tasking was later expanded by the Combined Arms Center (CAC) at Fort Leavenworth, Kansas, to include assessing the impact on staff sergeants (SSGs), sergeants first class (SFCs) and majors (MAJs). The FA School sent surveys throughout the FA force to gather the additional information. The feedback confirmed and even expanded the findings of the initial surveys.

The key competency areas most affected by rank and military occupational specialty (MOS) are shown in Figure 1.

With both a short-and long-term impact on the branch, these findings were alarming. The FA's ability to function across the spectrum of conflict and its units' abilities to plan, coordinate and synchronize fires for contingency missions is degraded. As a side effect, Field Artillerymen who are not tactically and technically proficient in their branch continue to be promoted to more senior levels of FA responsibility.

Army Force Generation (ARFORGEN). In 2006, Forces Command (FORSCOM) implemented the ARFORGEN model for managing the

Major/Captain
• Conduct battery- or battalion-level FA operations planning. • Apply the science of tactical fire direction. • Employ/synchronize fire support assets with maneuver. • Understand the art of fire support planning at the task force level. • Design automation training.
13B Cannon Crewmember Sergeant First Class (SFC)
• Conduct battery or platoon recon, selection, occupation and defense of position. • Supervise firing battery personnel. • Use gun-laying and positioning system.
13B Staff Sergeant (SSG)
• Train/supervise section personnel in cannon gunnery procedures and firing. • Verify safe firing data. • Supervise the operations of the M119, M198 and M109A6. • Place the weapons system into its safe firing configuration—trails, lay, aiming point identified, boresight verified, safe, prefire checks performed, ammunition prepared and position improvement (TLABSPAP).
13F Fire Support Specialist SFC/SSG
• Provide fire support at the battalion or brigade combat team (BCT) level. • Lead and train targeting elements from the corps to the battalion levels. • Advise fire support sergeants in planning and coordination.
13D FA Tactical Data Systems Specialist and 13P Multiple-Launch Rocket System (MLRS) Fire Direction SFC/SSG
• Perform technical/tactical fire direction. • Perform advanced FA tactical data system (AFATDS) database management. • Perform safety computation.
13S Survey Specialist SFC/SSG
• Perform all survey competencies.
13M MLRS Crewmember SFC/SSG
• Conduct reconnaissance, selection, occupation of position. • Conduct MLRS/high-mobility artillery rocket system (HIMARS) battery operations. • Conduct weapon-specific safety and process fire missions.

Figure 1: Survey and Assessment Results of Field Artillerymen's Skills Decay Due to Conducting Nonstandard Missions in the War on Terrorism (WOT)

ARFORGEN—A strategy to provide a continuous flow of Army trained and ready forces for full-spectrum operations. Active Component (AC) and Reserve Component (RC) modular units move sequentially through three force pools.

1. Reset/Train Force Pool—units coming out of deployments or with manning, organization or equipment challenges meet those challenges and conduct individual and battalion-level collective training.

2. Ready Force Pool—units conduct mission preparation and higher level collective training with other operational headquarters. Units are task-organized into two force packages: a Deployment Expeditionary Force (DEF) preparing to execute known or planned operational requirements or a Ready Expeditionary Force (REF) with each unit under a higher headquarters and conducting full-spectrum training.

3. Available Force Pool—units that are capable of deploying with little or minimal pre-mission training. A unit package is either a DEF or a Contingency Expeditionary Force (CEF). DEF units in the Available Force Pool are either deploying or deployed and include units conducting homeland defense and support. The remaining CEF units are capable of rapid deployment but have not been alerted yet. When a unit is alerted for deployment, it transitions from a CEF to DEF. After redeploying, the unit begins its training and readiness transition to a DEF again in the Reset/Train Force Pool.

Figure 2: Army Force Generation (ARFORGEN). This information was taken from the interview with the Army G3, Lieutenant General James J. Lovelace, Jr., "Today's Army in Change—An Exciting Place to Be" in the May-June 2006 edition, Page 7.

training and deployment of forces. The overarching purpose of ARFORGEN is "to provide combatant commanders and civil authorities with trained and ready units task organized into modular expeditionary forces tailored to joint mission requirements with a sustainable campaign capability and depth to conduct continuous full-spectrum operations in persistent conflict" (Headquarters, Department of the Army, Army Campaign Plan, Coordinating Draft, Change 4, Annex F, dated 27 July 2006).

This model consists of three force pools: Reset/Train, Ready and Available. These force pools comprise the structured progression of increased readiness within ARFORGEN (see the explanation of ARFORGEN in Figure 2).

Implementing any new process Armywide takes time to mature, and ARFORGEN is no different. The Army has termed this maturing period for ARFORGEN as the "bridging phase." This phase is projected to last until FY11 when the objective model will be fully implemented. The ARFORGEN objective envisions units constituting a particular force pool for approximately one year. The model would allow a unit one year to reset (recover from its recent deployment and then retrain its core competency tasks) and one year to conduct mission-specific training for a future deployment.

During the Reset/Train period, Soldiers who are eligible attend their respective professional military education (PME) courses. Units would be without those Soldiers until either they returned or replacements were assigned. The remainder of Reset/Train would provide adequate time for the commander to build and train the leadership teams within the unit. When a unit receives a deployment assignment, be it a traditional FA or a nonstandard mission, the unit would have approximately one more year to train for that mission.

The ARFORGEN model enables Soldiers of all ranks to reestablish their core skills, mitigating the effects of conducting nonstandard missions while deployed—a good plan. However, the model won't be fully implemented for several years. The model's implementation must factor in the limitations of the size of the overall force that is providing the formations for the high OPTEMPO of deployments with each impacting the other. The Department of Defense (DoD) is addressing the first factor, the size of the force, by asking for an increase in troop strength.

However, until the ARFORGEN is implemented as projected in 2011, units are in the bridging phase, working with a significantly different timeline than the objective ARFORGEN model. Essentially, the timeline for the Reset/Train and Ready pools are condensed to between 12 to 18 months, depending upon when a unit receives a mission based on a request for forces.

This roughly translates into six to nine months for commanders to reintegrate their units and conduct reset training, leaving six to nine months for mission-specific training. Currently, the majority of the units are experiencing the shorter timeline of 12 months total. Within this shorter timeline, it is a challenge for FA units to train the FA force on core competencies to doctrinal levels.

Commanders at all levels have to deal with limited time to train their mission-essential task lists (METLs). So they must choose between training the tasks their troops will perform during a deployment or training on FA tasks for the future proficiency of their Soldiers and leaders.

FA School Assistance. Without question, commanders must prepare their units for the missions they will execute while deployed—be they FA or nonstandard missions. Also without question, the FA School must provide units with individual Soldiers trained in FA skills for current mission requirements and the future of the branch. Additionally, however, the Chief of the Field Artillery directed the FA School develop a plan to help units reset the operational FA force.

The Directorate of Training and Doctrine (DOTD) was appointed the lead agency at Fort Sill to develop this plan. After considering many courses of action (COAs), the school is addressing the needs of the FA force in two forums: institutional-based training and unit training support.

Institutional FA Training. Before the Vice Chief of Staff of the Army tasking, the school already had begun examining ways to improve institutional training of the FA core competencies for individual Soldiers in their respective ranks and MOS.

Each element within the FA School responsible for developing and executing the courses looked at methods to provide the Soldier a more realistic training experience. One example of such a change is what the NCO Academy (NCOA) is doing in its Basic NCO Courses (BNCOCs). The NCOA is incorporating a four-day live-fire exercise into its BNCOCs where the students go to the field and execute their core competency tasks of training their subordinates to execute FA tasks. The first such live-fire exercise is in March and integrates the

operations of BNCOC students in MOS 13M Multiple-Launch Rocket System (MLRS) Crewmembers, 13P MLRS Operations/Fire Direction Specialists and 13F Fire Support Specialists. In April, BNCOC students in MOS 13B Cannon Crewmember, 13D FA Tactical Data Systems Specialist and 13F will experience integrated operations during their live-fire exercise.

Another initiative being looked at is developing a capstone exercise that would incorporate Soldiers in advanced individual training (AIT), NCOA and all officer education system (OES) courses. This exercise would require Soldiers at each level to perform all execution and supervisory core-competency tasks in the fire support chain.

Also, the FA School is participating in TRADOC efforts to improve and streamline institutional training, including the development of the new Army learning model for FACCC. Fort Sill was chosen as one of the sites to develop and conduct a pilot course in Fourth Quarter, FY07. The FACCC pilot will lay the foundation for future PME instruction.

One element of the pilot is that much of the information common to all the branches' captain's career courses will be instructed via distributed learning methods so students can complete the courses at their own pace, either before or during the resident phase of the course. The resident portion of the training also will incorporate more distributed learning methods. This will allow the resident instruction to focus on core FA skill training, ultimately, providing better trained Soldiers to the force.

While the institutional training can be adjusted to meet the overall force training needs, it is still basically a one-size-fits-all approach. This doesn't apply when trying to develop a training program for units. The training provided must meet the specific needs of the unit—must be flexible enough provide the training each unit commander needs.

Unit Training Support. The FA School determined two ways it could help train units: develop a "Reach Back" capability via the Internet, using downloadable training support packages (TSPs) and web-based interactive multi-media instruction and other educational training materials; and provide mobile training teams (MTTs) to support specific individual and limited collective training. Both of these training methods provide flexible direct assistance to units.

Units redeploying from OIF and OEF can access the Internet for Reach Back support. In most cases, these units return with key leaders with subject matter expertise in FA tasks still in their ranks, even after training for and conducting non-standard FA missions for more than a year. However, they return with some level of atrophy in their proficiency. Also, a promotion and subsequent change in duty position or level of responsibility affect the level of FA expertise a Soldier has in his job.

Some FA NCOs and captains, virtually, have had no time on their weapons systems as leaders. In these circumstances, FA leaders must have easy access to essential training references and materials.

During 2006, DOTD created a Reach Back capability on the Fires Knowledge Network (FKN) that included existing Internet TSPs and lesson plans from existing course programs of instruction (POI). The link is titled "FA Reset/Refresher Training." Much of the material was available already through other channels, such as the Army Correspondence Course Program (ACCP) and the distributed learning portion of courses, such as the Reserve Component FACCC.

While the consolidation of links to all of this material allows for a "one-stop-shop" enabling a simplified search for training material and references, the required navigation to get to the information was rather cumbersome. Some of the material was actually on the FKN server, while other material, such as the ACCP courseware, resided on a server not located at Fort Sill.

Although for the most part, this was transparent to the user, it still presented challenges for the student. If the material was part of a course that provided a completion credit toward promotion points or certification, there was a learning management system that controlled access. These obstacles created a path to the information that was not always intuitive for the user.

So the FA School is creating a true one-stop-shop by putting all the training materials on one server located at Fort Sill with the site projected to be operational in April. This will provide units simpler access to TSPs, web-based or distributed training materials and downloadable references. Access will require one AKO login.

Leaders will have the option of having Soldiers complete training from the server or download a TSP to help plan and execute training. The content is being structured to enable a user to access the material within only three to four "mouse clicks." The Reach Back server also will have a learning management system to enable commanders to track a Soldier's completing his assigned training.

The consolidation of these training materials and references will not replace

Field Artillerymen from B/3-321 FA, 18th FA Brigade, refresh their gunnery skills during a train-the-trainer mobile training team (MTT) session at Fort Bragg, North Carolina, in January 2007.

current programs for Soldiers to receive constructive credit for completion. The Reach Back resource's greatest attribute is that it will give the Soldiers access to information quickly to meet immediate training needs.

Reach Back is a resource for unit training after redeploying. It also will provide units sustainment training while deployed—although access to the Internet while deployed is a factor.

Currently, the FA School is developing approximately 1,000 hours of interactive multi-media training to be accessed via Reach Back covering all MOS. Some of the training is already on Reach Back while other products are still being certified.

In addition, Reach Back will have lessons learned feedback to facilitate the sharing and distribution of experiences and tactics, techniques and procedures (TTPs) from OIF and OEF.

Once the Reach Back server is operational in April, units will receive information on how to use its capabilities.

The FA School also will provide MTTs for more robust training—when the degradation of the unit leader skills have atrophied to a level that the unit cannot refresh the trainers via Reach Back. The school can provide MTTs for weapons-specific training and maintenance, manual and automated gunnery training, and fire support planning and execution training. Other training support capabilities, such as radar training, can be added, based on unit requests. The MTTs are tailored to meet the training needs of the unit commander using any of the resources available at Fort Sill.

While the FA School is willing to support any requests for MTTs, there are competing requirements. For example, instructors cannot be taken from their courses.

To receive MTT support, a unit must follow certain guidelines. First, the unit processes a training request through its chain of command up through FORSCOM to TRADOC so funding for the support is allocated with WOT funds. Requests must be submitted approximately 120 days in advance for coordination and staffing. This allows TRADOC to capture resource costs to establish a baseline for projecting future requirements.

Second, the training must be of short duration for the FA School to be able to support it—as a general rule, one to two weeks. The third guideline is the training must be to train-the-trainers. In most cases, the FA School can't provide enough personnel and time to train entire units, so the focus is on enabling leaders. Finally, units must provide or coordinate for the equipment needed to conduct the training.

To date, the FA School has executed one MTT in support of reset for the 18th Fires Brigade at Fort Bragg, North Carolina. The training consisted of two weeks of manual gunnery computation and safety training and two weeks of advanced FA tactical data system (AFATDS) refresher training for the brigade's 13D MOS personnel. The brigade provided all the equipment required to conduct the training, while the MTT provided the instructor equipment.

Another resource units can tap is the FA certification and qualification assistance provided by the FA Master Gunner Division at Fort Sill, as outlined in the column by Command Sergeant Major (CSM) of the FA, CSM William E. High, "The FA Master Gunner and Reset of the Redeployed FA Battalion," that appeared in the January-February edition.

Digital Training Resources. The 18th FA Brigade's AFATDS training was provided in cooperation with the Communications and Electronics Command (CECOM) personnel from Fort Sill and Fort Bragg, which are other agencies units can leverage for training support. Also, the battle command training centers (BCTCs) or BCTC hubs on most major installations can provide digital systems training at little or no expense to the unit. Fort Sill's BCTC is the Hamilton Digital Training Center, which is a hub extension from the III Corps BCTC located at Fort Hood, Texas.

Units can request training support from a BCTC online at http://www-bctc.army.mil. The centers offer classroom instruction on the operation of AFATDS, all-source analysis system-light (ASAS-L), maneuver control system (MCS), Force XXI battle command brigade and below (FBCB^2)/blue force tracker (BFT), and command and control personal computer (C^{2}PC). The courses can be tailored to meet the unit's training needs.

The key to making the FA reset program effective is to ensure commanders know the training capabilities available to them and then identify training requirements as early as possible so the FA School can help plan their reset training.

A TRADOC Reset initiative in the development of the ARFORGEN Reset Training Assistance Team (ARTAT) in November 2006. This team, which includes representatives from Fort Sill, coordinates with units to determine reset training requirements before the units redeploy via the units' rear detachment personnel. This requires units to identify their training needs while still in Iraq or Afghanistan.

Maneuver Pre-Command Course (PCC) Training. Army transformation has made maneuver commanders responsible for training the FA force. To educate these commanders on FA unit training requirements, the Chief of FA trains them in the Armor and Infantry PCCs via video teleconferences (VTCs) for every class. The VTCs have been great successes, providing forums for two-way discussions with maneuver commanders, emphasizing their responsibility for the unique training requirements for the fire supporters and other Field Artillerymen in their formations. The FA School's Reset Team will continue to inform commanders on training and support capabilities through updates on FKN, the commanding general's monthly e-note, Redleg 7 Report, fires and effects VTCs and visits to units. Maintaining the core competencies of Field Artillery Soldiers and leaders is the priority of Fort Sill.

If units have questions about Reset training available or how to access the training, they can contact the author at loyd.a.gerber@conus.army.mil or Lieutenant Colonel David Vineyard, Reset Coordinator, DOTD, at rd.vineyard@us.army.mil or by calling DSN 639-5903 or commercial 580-442-5903.

Lieutenant Colonel Loyd A. Gerber is the Chief of the Lessons Learned Branch in the Directorate of Training and Doctrine (DOTD) of the Field Artillery School at Fort Sill, Oklahoma. In his previous assignment, he was a Fire Support Observer/Trainer, in Operations Group B of the Battle Command Training Program (BCTP), Fort Leavenworth, Kansas. During Operation Iraqi Freedom (OIF) I, he was the S3 and then Executive Officer of 1st Battalion, 17th Field Artillery (1-17 FA) in Task Force *Iron Horse*, 4th Infantry Division, from the 75th FA Brigade, Fort Sill. Also at Fort Sill, he was a Small Group Instructor for the FA Captain's Career Course. In other assignments, he was the Brigade Assistant Operations Officer, an Observer/Controller Team Commander and S3 of the FA battalion in the 2/91 Training Division, Fort Carson, Colorado; and Battery Commander, Assistant S3 and Liaison Officer for 3-321 FA Regiment in the 18th Field Artillery Brigade, Fort Bragg, North Carolina.

NGOs in CMO

By Captain Matthew D. Campbell

When US and Coalition Forces invaded Iraq in March 2003, the Iraqi people reacted in an unexpected fashion. They stayed in Iraq instead of becoming refugees, and the Iraqi combatants destroyed their own country's infrastructure, to include water and electric lines, government buildings and factories that provided the jobs and goods the population needed. Schools, hospitals and businesses were looted. The oil pipelines and processing facilities were sabotaged, and the workers left because no one was left to pay their wages.

Insurgents scared off the few law enforcement officers who tried to respond, and the Iraqi Army and border police quit and left their posts. The Iraqis had little leadership and plunged into lawlessness. Uncertainty became a way of life for the once powerful country.

During the stability phase that began shortly after the government of Saddam Hussein toppled, nongovernment organizations (NGOs) began working to make positive changes amid the chaos that was Iraq. The problem was that there were not enough NGOs to take care of the Iraqis' needs. A large amount of humanitarian operations fell on the shoulders of the Coalition Forces, called civil-military operations (CMO), especially in the areas the farthest away from Baghdad.

What could the US military have done to get more NGO involvement earlier to support humanitarian assistance and nation-building in Iraq? This article explores the kinds of NGOs that exist and the support the US military can offer to make NGO humanitarianism and nation-building work in conjunction with stability and support operations.

NGOs and Their Challenges. There are no easy answers for the problems involved in supporting NGOs in a combat zone. A good start is arming ground commanders with the knowledge that they need to understand what NGOs do. NGOs range from humanitarian to political to developmental in scope and are not limited to nonprofit organizations.

The US Department of State keeps a registry of several organizations with its US Agency for International Development (USAID).[1] According to Mark Palmer, Vice Chairman of Freedom House, the US spends $1.4 billion on NGOs that promote democracy.[2] Therefore, a commander in Iraq could expect to see any number of NGOs in his area of operations (AO). Knowing their goals and how they affect military operations are the keys to successful coordination with them.

The NGOs working in Iraq and Afghanistan face the same CMO challenges the US military faces. NGOs often have to work in areas where there is little security, and sectarian conflicts arise and put them in the middle.

The US military has coordinated with some NGOs to help with security, but often the NGOs want to distance themselves from any involvement with the US government. Some of the desire to distance themselves stems from Russian

An Air Force combat controller escorts the first civilian aircraft to land on the commercial runway at Baghdad International Airport on 24 April 2003. The aircraft brought in International Red Cross personnel, making the Red Cross the first nongovernment organization (NGO) to arrive at the airport. (Photo by SSG Cherie A. Thurlby, 1st Combat Camera)

Photo by SSG Leopold Medina, Jr., 55th Signal Company, Combat Camera

CPT Kevin Kit Parker of the 450th Civil Affairs Battalion hands out a hygiene pack donated by the nongovernment organization (NGO) Healing Hands International Humanitarian Relief to a young boy in Kandahar Province, Afghanistan.

and Venezuelan governments' propaganda campaigns painting a picture of NGOs as tools of US interventionism.[3]

In his statement before the House Government Reform Committee, Ernest O. Robbins II, Senior Vice President and Manager of the International Division of Parsons Infrastructure and Technology Group, testified that several challenges faced his organization in Iraq. A lack of trained Iraqi engineers and skilled craftsmen, the personal security of workers and NGO staff, and sectarian violence and terrorism caused many projects to go unfinished. Contractors were subjected to death threats and intimidation. Building materials were stolen from the worksites with ransom demands to get them back. Transportation to and from the worksites was dangerous for everyone.[4]

Many NGOs left Iraq because their workers were being kidnapped, threatened or killed. US military forces could not be everywhere to protect them. In places like Fallujah, Ramadi, Al Qa'im, Tikrit and Baghdad, NGOs and their contractors constantly face the possibility of death or kidnapping. In 2004 several contractors were kidnapped from Fallujah and killed as an example of what would happen to anyone who helped the Coalition Forces make life better for the Iraqi people. Even with private security contractors and armored vehicles, NGOs face an uphill battle to do their work.

The problem is that NGOs want to be autonomous and operate without US military support, whenever possible. In Iraq, that is not always possible.

Civil affairs teams (CATs) do what they can to get out and help manage reconstruction and governmental development projects, but there are not enough CATs to operate over the vast expanse of Iraq. The Army needs a closer partnership with NGOs to spread the responsibility for stability. Working some of the NGOs into operations on a wider scale could be the solution to some issues.

The "Targeting" Process as a Solution. With emphasis on nonlethal effects as a means of combating insurgent operations, the targeting process outlined in *FM 6-20-10 Tactics, Techniques and Procedures for the Targeting Process* can be tailored to include NGOs. The decide, detect, deliver and assess (D^3A) methodology for NGOs works similarly to the process that information operators are using in Iraq and Afghanistan. Some NGOs may take offense at being "targeted," but the process has its benefits. Perhaps new terms could be devised for the process that are less combat-oriented and less offensive. These could be "NGO of focus" (NGOF) for "target" or the high-payoff NGO (HPN) for high-payoff target (HPT).

Decide. With the varying types of NGOs in a theatre of operations, this phase can help commanders focus on what NGOs best meet the needs of the local population and coordinate with those NGOs. An HPT list that highlights specific NGOs working in an area would be a useful tool. Also, NGOs could be included in the priority intelligence requirements (PIRs) as part of the collection management plan. The commander could set criteria for using specific NGOs in operations based on target selection standards (TSS). Just like in the lethal effects arena, staffs can develop an attack guidance matrix (AGM) to list the what, how, when and effects desired when working with a specific NGO.

All these tools can help commanders and staffs target NGOs. For example, NGOs working in a particular area could be noted on a spreadsheet and sorted by type and location and become PIRs for units on patrols.

Detect. This critical targeting function may provide some challenges as many NGOs prefer to work autonomously, except when they feel their safety is at stake. Detecting an NGO's existence may be as challenging as tracking its movements and specific projects.

An example, based on my experience, is the sudden appearance of a Canadian-based civil rights organization in the Ninevah Province in Iraq that had the goal of defending the rights of the Yeziddi people. If they had not flagged down a US patrol in the area and invited them to a wedding, months could have gone by without the organization's being detected. The timing of this detection turned out to be critical because the 2005 referendum vote on the new Iraq Constitution was only a few weeks away.

By accident, we found out one of the NGO's objectives was to place monitors at the polling sites to ensure the Yeziddis could vote without intimidation from other ethnic groups. However, such a move required more coordination to make sure the validity of the monitors would not be questioned.

A system of tracking NGOs in a particular area of operations is critical for successful targeting. Knowing the needs and goals of certain NGOs can make a difference as to whether they will help or hurt CMO.

Deliver. The deliver portion of this discussion really involves what to do once the unit knows what NGOs are present. From an information operations (IO) standpoint, a formal meeting, such as a bilateral discussion or a visit to one of the NGO's project sites, can be beneficial to both sides. Some would consider "delivery" as coordinating with a specific NGO to help them with a goal, such as a medical civic-action program (MEDCAP) or a food drop.

These partnerships can be somewhat awkward due to conflicting ideologies. For instance, a bilateral meeting with Amnesty International 24 hours after a patrol detains 40 suspected insurgents in the area may not go well.

It is important in this phase for commanders and planners to understand what goals the NGO desires. When military assistance to an NGO occurs, it is important to remember that the NGO should have the lead and the military should be the enabler.[5] If the targeting process has worked, the NGO(s) selected to be supported will be the one(s) whose projects are the most effective for the Iraqi or Afghan people and that also help the unit accomplish its mission.

Assess. Determining the effectiveness of coordination with NGOs can take some time. Some effects may be immediate, such as getting electricity turned back on in a needy village. Other measures of effectiveness (MOEs) may be harder to assess due to time constraints or the elusiveness of the NGOs.

The autonomous nature of many NGOs can make assessing the effectiveness difficult. If an NGO is training medical personnel in a specific area, assessing the level of effectiveness of that training could take years, and the military unit may never see the results.

Despite these challenges, it is still important to measure effectiveness to determine how much time and expense the unit can devote to an NGO's projects in the future. Just as in battle damage assessment (BDA), the reliability of the assessment depends greatly on the resources available to conduct the assessment.[6]

The targeting process as outlined is a tool that fire supporters and commanders can use to plan for involvement with NGO operations. The true goal is that a greater amount of cooperation between the military and NGOs could lead to a more stable host nation environment and, eventually, help defeat insurgent operations.

As General George W. Casey, Jr., until recently, Commander of the MultiNational Forces in Iraq, told Charles Hess, the Director of the Iraq Project and Contracting Office, US Embassy, Baghdad, in 2005, "…it is a counterinsurgency campaign, and all elements of national power must work synergistically to defeat the insurgents."[7]

Captain Matthew D. Campbell is a student at the Field Artillery Captain's Career Course in the Field Artillery School at Fort Sill, Oklahoma. He previously served as an Assistant Fire Support Officer (FSO) and Civil-Military Operations (CMO) Officer for 1st Squadron, 3rd Armored Cavalry Regiment (1-3 ACR) at Fort Carson, Colorado, deploying with the unit for Operation Iraqi Freedom (OIF) III. Also during OIF III, he served as the FSO for B Troop, 1-3 ACR. In the same squadron, he was the FSO for D Company during OIF I and a Platoon Leader and the Fire Direction Officer in the Howitzer Battery. Immediately before Captain Campbell attended the Reserve Officer Training Course (ROTC) at the University of Kentucky at Lexington, he was a Sergeant and served as a Cavalry Scout Instructor with C/2-397 Cavalry, 100th Division (Institutional Training) at Fort Knox, Kentucky. He holds a BA in Religion from Georgetown College in Georgetown, Kentucky, and a BA in Geography from the University of Kentucky.

Endnotes:

1. *FM 3-07 Stability Operations and Support Operations* (Washington, DC: Headquarters, Department of the Army, 2003), A-11.
2. Mark Palmer, "Non-Government Organizations and Development of Democracy," "Federal Document Clearing House Congressional Testimony," 6 June 2006, accessed online with Accession Number 32Y0082262137, "Military and Government Collection," 5 November 2006.
3. Richard G. Lugar, Chairman, Senate Foreign Relations Committee, "Non-Government Organizations and Development of Democracy," "Federal Document Clearing House Congressional Testimony," 8 June 2006, accessed online with Accession Number 32Y1305586204, "Military and Government Collection," 5 November 2006.
4. Ernest O. Robbins II, "Reconstruction Contracting in Iraq," "Federal Document Clearing House Congressional Testimony," 28 September 2006, accessed online with Accession Number 32Y2483957415, "Military and Government Collection," 5 November 2006.
5. *FM 3-07*, A-11.
6. *FM 6-20-10 Tactics, Techniques, and Procedures for the Targeting Process* (Washington, DC: Headquarters, Department of the Army, 1996), 2-1 to 2-15.
7. Agency Group 09, "Construction Projects in Iraq Have Security Payoff, Official Says," "Federal Document Clearing House Regulatory Intelligence Database," 19 January 2005, accessed online with Accession Number 32W0625318162, "Military and Government Collection," 5 November 2006.

The Chief Medical Officer of V Corps holds an NGO conference in Baghdad on 22 April 2003. (Photo by SGT Igor Paustovski, 55th Signal Company, Combat Camera)

Cultural Awareness and WOT

By Dr. Dorothy Guy Bonvillain

A tense encounter with a frenzied crowd in Najaf during Operation Iraqi Freedom (OIF) I began spiraling out of control with no apparent way out of direct conflict. The US Army battalion commander then ordered his troops to "Take a knee, point your rifles at the ground and smile." Next, he ordered them to "Stand, turn your backs on the crowd and walk away."

His informed directives saved lives. In the Arab culture, a blank face indicates hostility while a smiling face conveys friendship. The Soldiers' turning their backs on the crowd showed trust. Because of their commander's knowledge of Arab culture, the Soldiers were able to defuse this dangerous situation.

CNN caught this now famous incident on tape and aired it, hailing these Soldiers as "heroes of war" who saved American and Iraqi lives by demonstrating their valor and restraint. The commander of that unit, 2nd Battalion, 327th Infantry (2-327 IN), 101st Airborne Division (Air Assault), then Lieutenant Colonel Christopher P. Hughes, clearly made his command decision based on cultural intelligence.[1]

Military commanders increasingly are becoming aware of the critical link between cultural intelligence and success in the contemporary operating environment (COE). For Field Artillerymen serving in FA, maneuver or other nontraditional units in the War on Terrorism (WOT), cultural awareness enhances their ability to conduct operations with Arabs or other foreigners. This is especially true not only for commanders at all levels, but also for those who serve on fire support teams (FISTs) and as fire support officers (FSOs) and effects coordinators (ECOORDs), coordinating and conducting nonlethal effects, such as information operations (IO) and civil-military operations (CMO).

Even so, we at the Training and Doctrine Command (TRADOC) Culture Center at Fort Huachuca, Arizona, still hear the argument that training for the unit mission allows little or no time for cultural awareness training. Another argument is that "War is war! We are in WOT to keep terrorists off US turf!"

This article discusses the importance of cultural awareness training for WOT, the needs and priorities of the Iraqi people in comparison with Americans', and techniques to demonstrate cultural awareness and most effectively execute the mission. Some of these basic techniques include identifying leaders, respecting elders and socializing with Arab contacts.

If we listened to our military transition teams (MiTTs), border transition teams (BTTs) and special police transition teams (SPTTs) returning from Iraq and Afghanistan, we clearly would hear the message that cultural awareness training is important. They say that cultural training would have better informed them and facilitated their missions—but training was either nonexistent or deficient before they deployed.

For example, see the article "So, You're Going to be on a MiTT. What Do You Need to Know?" by Captain Jared R. Kite, et al, in the November-December 2006 edition. This article discusses the team's lessons learned in Mosul and the relevance of "soft cultural skills" to their mission.

TRADOC's Operations Order (OPORD) 05-123A for Professional Military Education (PME), October 2005, identifies cultural awareness training as one of TRADOC's top three training initiatives. In response, the Culture Center developed a training support package (TSP) to teach units about Iraqi and Afghan values, beliefs, behaviors, norms, ancient history, culture and religion. The ultimate goal is for this training to make Soldiers more aware of cultural differences and treat the Iraqis and Afghans with dignity and respect, making the Soldiers more effective in WOT deployments.

The fact is that cultural awareness enhances Soldiers' understanding of Arab insurgents and noncombatant population and facilitates situational awareness in both lethal and nonlethal operations. Situational awareness translates into more informed decision making, ultimately saving Soldiers' lives. Some of the benefits of cultural awareness training are outlined in Figure 1.

Culture within Context and by Comparison. While visiting the TRADOC Culture Center in the fall of 2006, now Colonel Hughes emphasized that, for any area of the world, identity *is* culture. Within any culture, *knowing* the people is the "center of gravity" for influencing the people—the goal of any counterinsurgency.

Colonel Hughes discussed "Maslow's Hierarchy of Needs"[2] and revised the hierarchy to compare the Iraqi and US cultures, as shown in Figure 2 on Page 24. The hierarchy on the left for Iraq is the more traditional hierarchy. Iraq is a nation with a recently deposed dictator and an infant democracy, so the figure shows a natural progression of the people's concerns and time spent to secure first their *physical* needs (food, shelter, water and clothing) and then to feel *safe*. People must satisfy these basic needs before they can move on to *socializing* and establish enough confidence and status, or *esteem*, to *self-actualize*—become creative, independent self-starters who can maximize their human potential.

Cultural Awareness—

- Protects and saves lives—American and host national.
- Enables Soldiers and leaders to accomplish their tasks and missions more effectively.
- Produces long-term relationships versus short-term gains.
- Improves diplomatic relations by decreasing social blunders.
- Enables a more seamless unit replacement process (relief-in-place) in country.
- Reduces operational costs and the loss of equipment.
- Increases overall situational awareness and effective decision making.

Figure 1: Benefits of Cultural Awareness

In comparison, the hierarchy for the United States is on the right in Figure 2. Although this hierarchy shows the same progression of people working their way up through securing their physical needs to the ultimate of self-actualization, the classic "pyramid" shape of the hierarch is inverted. This shows the diminished amount of time, concern and effort necessary for Americans to attain their basic needs before progressing through the hierarchy to self-actualization. The difference is that the US has an abundance of wealth and infrastructure and a mature system of rights established by our Constitution and laws that are established and enforced by our federal, state and local governments. Also, the US does not have tribal or religious leaders or foreign insurgents fighting

Always treat an Iraqi with respect. Here SGT Brian Hayes, a psychological operations specialist with the 1st Cavalry Division, removes his glove to shake hands with a Baghdad resident.

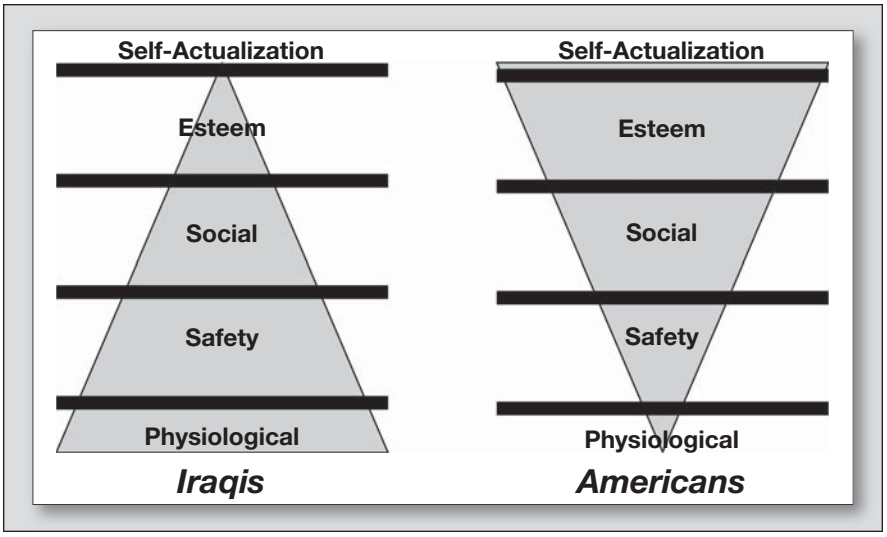


Figure 2: Maslow's Hierarchy of Needs. The Iraqi hierarchy is compared to the American hierarchy, indicating priorities. Until a people's physical and safety needs are met, they will not progress up the hierarchy—their priorities will be on the basics of survival. The inverted "pyramid" in the American hierarchy indicates the comparative level of concern for and effort Americans must exert to progress through the earlier stages of the hierarchy.

each other on American soil for control of our country. Without understanding the different needs of the Iraqi people, Americans easily can misunderstand Iraqi priorities.

Figure 3 takes the same Iraqi hierarchy of needs and lists the Coalition Force's progression of military objectives beside those needs, leading to the goal of a free and independent Iraq. Note that the Iraqis' need for securing food, water, shelter and safety call for the most Coalition Force support (time, energy and dollars) and make the Iraqis most vulnerable to coercion by insurgents—most vulnerable to insurgent acts of violence. Only when the Iraqis' (or any people's) needs are met at the lower levels will they be able to move up the pyramid.

Understanding the Iraqi culture within the context of the people's priorities and vulnerabilities allows Soldiers and their leaders to understand situations in Iraq more accurately.

Identifying Leaders. Soldiers can use some practical techniques to demonstrate their cultural understanding, allowing them to more effectively accomplish the mission. A colleague of mine, Bassam Almesfer, a native of the Gulf Region, served as a language and cultural interpreter for the US Marines in Iraq during OIF II. Bassam shared the following scenario relating the relevance of cultural awareness to operations in theater.[3] To paraphrase what Bassam said…

We were on a routine trip to Najaf with three vehicles and nine Soldiers when we encountered an Iraqi vehicle carrying 12 personnel armed with AK-47s. The situation quickly intensified when we surrounded the vehicle and requested all to step out of and away from the vehicle. The gunmen refused and pointed their weapons at us. Our Soldiers proceeded to the "ready" position as well.

As the situation escalated, I spotted a gentleman stepping out of the back of the truck wearing a headpiece that denoted him as a cleric—the person of influence in the truck. Ignoring the increasingly tense situation, I requested permission to speak with him as a sign of respect. I approached the cleric with the utmost respect and explained that we had no intentions of harming anyone; however, we wanted to remove their weapons and have the local authorities check them out.

I respectfully asked him to help us stabilize the situation and, in turn, stated that we would provide security for his journey to his destination. Surprised by the offer, he then ordered his men to put down their weapons. We escorted him and his personnel to their destination.

The story spread like wildfire, and we became known as the good people who had ensured the cleric's safety.

This incident laid the foundation for establishing a relationship with the cleric, and we were able to secure his cooperation on many other matters in the area for months to come. As a result, we conducted visits to the area with ease and communicated with many people in and around Najaf.

The key points are that we identified the leader and treated him with respect: called him "Sir," asked him for permission to speak to him, were profusely apologetic about the difficult situation and escorted him to his destination safely. This culturally informed approach allowed us to build a long-term relationship that proved beneficial to our mission.

Showing Elders Respect. Bassam Almesfer also described visits to neighboring villages where he took extra care to stop and extend greetings to elders in the area. He taught Soldiers within his sphere of influence to take extra care when they saw elders and always to treat them with respect as a demonstration that the Soldiers recognized the dignity of the elders in the tribal system and honored them. As a result, Americans gained the villagers' trust and were able to consult with the elders frequently. The elders used their power and prestige to help the Soldiers conduct more effective missions.

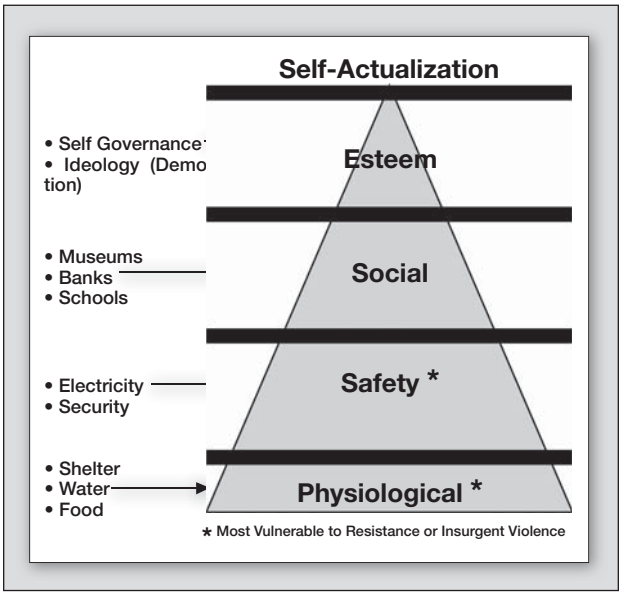


Figure 3: Military Objectives in Iraq Based on Iraqi Priorities. Note that the Iraqis are most vulnerable to resistance or insurgent violence at the earlier "Physiological" and "Safety" hierarchy stages. As the Iraqi people mature toward democracy, the levels of resistance and violence become less likely.

Showing respect for elders demonstrates that you respect the Afghan culture and people.

Iraqi elders are the "hidden jewels" of the operational area. In their villages and tribes, they have the final word and can influence many by their status and power.

Taking Time to Socialize. Arabs are firmly entrenched within a system of allegiances. They follow a code of honor and are loyal to family, tribe and (or) clan with Islam permeating their everyday lives—on every level from personal to political. Their primary concerns move in concentric circles from within their home, family, elders and family/tribal honor and pride.

To build trust and relationships that can facilitate change and the success of their operations, Soldiers and leaders must get to know their Arab contacts within the context of these strong influences. Therefore, it is worthwhile to invest time just sitting in coffee shops with locals and talking about the village, the tribe, the weather or whatever they choose to discuss.

When the locals know Soldiers and leaders are coming to the market to drink tea instead of always "conducting operations," then the atmosphere is more relaxed and people get to know the Soldiers and become more responsive and helpful. Unhurried time spent with Arabs establishes a highly valued bond and a level of trust that only can be earned.

It is critical that Soldiers and leaders have trusted local sources of information to help them ferret out insurgents in a neighborhood or be forewarned of ambushes on "the only paved road in town." By respecting leaders and elders and taking the time to get to know the people, Soldiers and leaders build trust and create loyalty in the Iraqi people, their leaders and interpreters.

On the other hand, using fear as a tactical tool to get information does not establish trust or create loyalty. Sometimes in WOT, Soldiers must use fear to interrogate known terrorists or Iraqis caught attacking Coalition Forces or innocent Iraqi citizens. But as a rule, trust and loyalty that go both ways is critical for Iraqis to feel safe and help units accomplish their missions.

Even though the political climate is changing, people in the Middle East have *chosen* to remain the same for hundreds of years. Their cultural values, beliefs, norms and behaviors continue to play a fundamental role in real-life situations throughout the region. By being culturally aware and investing time in the locals, Bassam Almesfer's Soldiers fostered friendly relations with locals and had no life-threatening incidents in their area of operations (AO) on either side for more than a year and one-half.

Other Tactical Techniques. At the tactical level, there are many things Soldiers and leaders can do to build relationships and influence the people in counterinsurgency operations. Here are a few of them.

- Know the customs, mores, religion and culture of the people in your AO.
- Always show respect when approaching locals and smile—especially for the most valued members of their culture: elders and leaders. Do this regardless of whether they are clean or dirty, barefoot or well dressed. With this approach, locals will be more willing for you to search them without offense and (or) provide information.

TRADOC Culture Center

The Training and Doctrine Command (TRADOC) created the Culture Center in 2004 at Fort Huachuca, Arizona. This initiative established the center and Fort Huachuca as the proponent for cultural awareness training.

The center consists of a training and development team and a mobile training team, the latter that conducts training throughout the Continental US (CONUS), as well as an institutional team that conducts culture training at the Military Intelligence School, also at Fort Huachuca. Together they have trained thousands of Soldiers and leaders throughout CONUS and in Europe.

In June 2006, the training and development team completed a FY07 training support package (TSP) that includes more than 300 hours of cultural training and a 40-hour train-the-trainer program on Iraq and Afghanistan as contemporary nation states. The TSP is for units and other TRADOC schools. The TSP answers four training questions: What is "culture"? What is American culture? What is the culture in the contemporary operating environment (COE)? and What is culture's impact on military operations?

Additional TSPs are under development for cultural awareness for the Horn of Africa, Iran, China, Sub-Saharan Africa and other strategic countries or regions.

The TSP is accessible online at http://www.universityofmilitaryintelligence.us/main.asp. To schedule the train-the-trainer course at your duty station, call Bill Hargis at Fort Huachuca via commercial (520) 459-5730 or email him at william.hargis@gdit.com.

After having built mutual respect and trust with the area residents, SGT Brian Hayes learns of security concerns in a Baghdad neighborhood from an Iraqi child.

• Learn key Arabic phrases and use them to open communications with the Arab people. Understanding how to use language within the framework of cultural application is critical.

For example, before asking a question or making a request, say *"Min Fathalk,…"* or *"Lau Samaht,…."* These mean "If you please" or "If I may ask." They are signs of respect and widen the pipeline of communications.

Arabs favor using religious expressions because Muslims integrate religion into their everyday lives and language. Phrases such as *"In-sha'Allah,"* meaning "if God is willing"; *"Al Hamdu Lillah,"* meaning "thank God"; and *"Mashaa Allah,"* meaning "with God's blessing" will help Soldiers to connect with Arabs.

• Understand that Arabs have a different sense of time than Americans, which often causes Americans to see them as "undependable." When an Arab says, *"In-sha'Allah,"* something may or may not get done—only "If Allah wills it."

• Never tell locals what you want them to do without first asking what they need.

• Learn to identify key personnel based on their culture; political, tribal or religious affiliations; and their economic and financial status.

• Learn to evaluate the political effectiveness of Arab leaders in your AO, both formal and informal.

• Know persuasion techniques and how to conduct the negotiation process.

• Know the basic differences between Sunnis and Shiites and which sect influences which part of your AO.

• When training Iraqi soldiers or policemen, Sunnis and Shiites should be together in squad-sized elements and forced to rely on one another. Genghis Khan did this to make rival tribes he conquered integrate and assimilate into one people—and it worked.

• When training host nation soldiers or police, use cross-cultural skills to guide and mentor them.

Ignoring a people's culture leaves Soldiers and leaders ignorant of the broader

Cultural Awareness Readings

1. Jason B. Baker, "Winning Hearts with Cultural Awareness," *Soldiers* (58, July 2003), 29, available online at http://www.army.mil/soldiers/jul2003/july03textall.html.
2. Brian Beckno, "Preparing the American Soldier in a Brigade Combat Team to Conduct Information Operations in the Contemporary Operational Environment" (Fort Leavenworth, KS: Command and General Staff College or CGSC), 2006, available online at http://handle.dtic.mil/100.2/ADA451276.
3. Constantine Emilian Beleaga, "The Role of Cultural Understanding and Language Training in Unconventional Warfare" (Monterey, CA: Naval Postgraduate School), 2004, available online at http://handle.dtic.mil/100.2/ADA429682. Document call number is M-U 42525 B428r.
4. Raymond Bingham, "Bridging the Religious Divide," *Parameters* (Autumn, 2006), 50-66.
5. Elizabeth E. Bledsoe, "The Use of Culture in Operational Planning" (Fort Leavenworth, KS: CGSC), 2005, available online at http://handle.dtic.mil/100.2/ADA436485. Document call number is M-U 42022 B646u.
6. Richard R. Burgess, "Cultural Links: Foreign Area Officers Help Forge Relationships between U.S. Forces and Indigenous Populations," *Sea Power* (48, November, 2005), 22-24, available online at http://www.navyleague.org/sea_power/nov05-22.php.
7. Jennifer V. Chandler, research paper, "Why Culture Matters: An Empirically Based Pre-Deployment Training Program" (Monterey, CA: Naval Postgraduate School), 2005. Document call number is M-U 42525 C455w.
8. Scott D. Chowning, "The Clash of Cultures" (Maxwell Air Force Base, AL: Air Command and Staff College), 2003. Document call number is M-U 43122 C552c.
9. Michael L. Davidson, research paper, "Culture and Effects-Based Operations in an Insurgency" (Fort Leavenworth, KS: CGSC), May 2005, available online at http://handle.dtic.mil/100.2/ADA437568. Document call number is M-U 42022-2 D253c.
10. Sandra I. Erwin, "U.S. Military Training Fails to Grasp Foreign Cultures, Says Rep. Skelton," *National Defense* (88, June, 2004), 16, available online at http://www.nationaldefensemagazine.org/issues/2004/Jun/US_Military.htm.
11. Barbara G. Fast, "Always Out Front," *Military Intelligence Professional Bulletin* (31, January-March 2005), 2-7, available online at http://www.universityofmilitaryintelligence.us/mipb/article.asp?articleID=424&issueID=25.
12. Seth Frail, "Perceptive Protocol: Top 10 Cultural Faux Pas," *Airman* (50, Spring 2006), 28-29.
13. Thomas Friedman, *From Beirut to Jerusalem* (New York, NY: Anchor), 1990.
14. Daniel Goleman, *Social Intelligence: The New Science of Human Relationships* (New York, NY: Bantam Books), 2006.
15. Colin S. Gray, "Comparative Strategic Culture," *Parameters* (Winter, 1984), 26-33.
16. Remi Hajjar, "The Army's New TRADOC Culture Center," *Military Review* (November-December 2006), available online at http://usacac.army.mil/CAC/milreview/English/NovDec06/Hajjar.pdf.
17. Jeff D. Hudson and Steven A. Warman, research paper, "Transforming the American Soldier: Educating the Warrior-Diplomat" (Monterey, CA: Naval Postgraduate School), 2000, available online at http://handle.dtic.mil/100.2/ADA435524. Document call number is M-U 42525 H885t.

1st Cavalry Division Soldiers interact with children in Baghdad. Interaction conducted with dignity and respect can save lives. Locals often warn Soldiers of impending ambushes or the locations of insurgents.

negative consequences their actions can have and of the broader positive effects their cultural awareness could have on accomplishing the mission. The mission is to move the Iraqi people up the Maslow's hierarchy toward security and total independence.

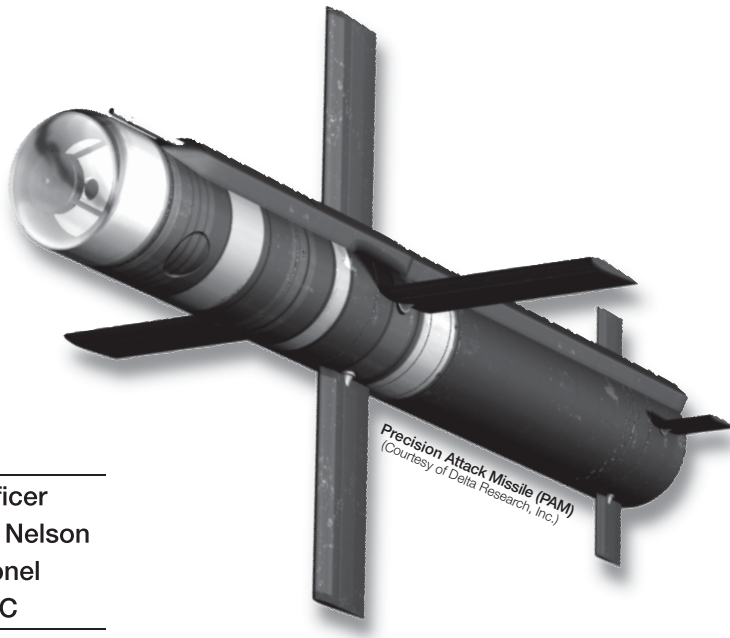
Dr. Dorothy Guy Bonvillain works for General Dynamics Information Technology and is under contract with the Army as a Training Developer and Instructor for the Training and Doctrine Command (TRADOC) Culture Center at Fort Huachuca, Arizona. In related experiences, she served as the Educational Outreach Coordinator for the Royal Embassy of Saudi Arabia in Washington, DC; Program Manager for the National Council on US-Arab Relations, also in Washington, DC; and has lectured on Saudi Arabian Culture for the Foreign Service Institute in Rosslyn, Virginia. In the Middle East, she was a Special Consultant to the Minister of Education in the Sultanate of Oman where she led an Arab research team to document traditional Omani handicrafts; and Executive Assistant to the Superintendent of the US National Parks Service in the Asir Region of southwestern Saudi Arabia. She has a Ph.D. in Educational Administration/International Education from the American University in Washington, DC. Her email is dorothy.bonvillain@gdit.com.

Endnotes:

1. Colonel Christopher P. Hughes, former commander of 2nd Battalion, 327th Infantry Brigade, 101st Airborne Division (Air Assault), in Operation Iraqi Freedom (OIF) I, shared some of his experiences in Iraq with the staff, students and Soldiers at the Training and Doctrine Command (TRADOC) Culture Center at Fort Huachuca, Arizona, on 30 October 2006.
2. Abraham Maslow discussed his hierarchy of needs in "A Theory of Human Motivation," *Psychological Review* (Volume 50, Number 4, 1943), 370–396.
3. Author's interview with Bassam Almesfer, currently a Training Developer and Instructor in the TRADOC Culture Center, December 2006.

18. Efraim and Inari Kaish, *The Empires of Sand: The Struggle for Mastery in the Middle East,* 1789-1923 (Cambridge, MA: Harvard University Press), 1999.
19. Jared R. Kite, Christopher L. Matson and Richard A. McConnell, "So, You're Going to be on a MiTT. What do You Need to Know?" *Field Artillery* (November-December 06), available online at http://sill-www.army.mil/FAMAG/index.asp.
20. Bernard Lewis, *The Middle East: A Brief History of 2000 Years* (New York, NY: Touchstone Books), 1997.
21. Brett G. Lewis, research paper, "Developing Soldier Cultural Competency" (Carlisle PA: Army War College), 2006, available online at http://handle.dtic.mil/100.2/ADA449393. Document call number is M-U 39080-537 L6732d.
22. Maxie McFarland, "Military Cultural Education," *Military Review* (85, March-April 2005), 62-69, available online at http://usacac.army.mil/CAC/milreview/download/English/MarApr05/macfarland.pdf.
23. Montgomery McFate, "Anthropology and Counterinsurgency: The Strange Story of Their Curious Relationship," *Military Review* (85, March-April 2005), 24-38, available online at http://usacac.army.mil/CAC/milreview/download/English/MarApr05/mcfate.pdf.
24. Robert B. Nett, "Ambassadors to the World: Cultural Awareness for Americans in Uniform," *Infantry* (94, November-December 2005), 18-19, available online at https://www.benning.army.mil/magazine/2005/2005_6/09_pf04.pdf.
25. Margaret Nydell, *Understanding Arabs: A Guide for Modern Times* (Boston, MA: Intercultural Press), 2005.
26. Raphael Patai and Norvell B. De Atkine, *The Arab Mind* (Long Island City, NY: Hatherleigh Press), 2002.
27. Matthew C. Paul, "Tactical Questioning," *Infantry* (95, January-February 2006), 22-25, available online at http://www.trackpads.com/magazine/publish/article_1640.shtml.
28. Joseph Pepper, Jr., research paper, "Winning the Counterinsurgency Fight in Iraq: The Role of Political Culture in Counterinsurgency Warfare 2003-2006 in Iraq" (Fort Leavenworth, KS: CGSC), 2006, available online at http://handle.dtic.mil/100.2/ADA450481. Document call number is M-U 42022-2 P4241w.
29. Ralph Peters, "The Hearts-and-Minds Myth: Sorry, but Winning Means Killing," *Armed Forces Journal* (144, September 2006), 34-38, available online at http://www.armedforcesjournal.com/ 2006/09/1947271/.
30. Barak A. Salmoni, "Beyond Hearts and Minds: Culture Matters," *Naval Institute Proceedings* (130, November 2004), 54-56.
31. Robert H. Scales, Jr., "Culture-Centric Warfare," *Naval Institute Proceedings* (130, October 2004), 32-36.
32. Andrew W. Stewart, research paper, "Friction in U.S. Foreign Policy: Cultural Difficulties with the World" (Carlisle, PA: Strategic Studies Institute, Army War College), 2006, available online at http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB706.pdf.
33. Michelle Tan, "Cultural Awareness Training to Become Mandatory October 1," *Army Times* (67, 18 September 2006), 27.
34. George A. Van Otten, "Culture Matters," *Military Intelligence* (31, January-March 2005), 30-37, available online at http://search.ebscohost.com/login.aspx?direct=true&db=mth&an=18530537.
35. Timothy R. Williams, research paper, "Culture—We Need Some of That! Cultural Knowledge and Army Officer Professional Development" (Carlisle, PA: Army War College), 2006, available online at http://handle.dtic.mil/100.2/ADA448821. Document call number is M-U 39080-537 W7271c.

NLOS-LS in the Army Evaluation Task Force (AETF)


Precision Attack Missile (PAM)
(Courtesy of Delta Research, Inc.)

By Chief Warrant Officer Four (Retired) Robert A. Nelson and Lieutenant Colonel William E. Field, AC

The Army is pursuing the most comprehensive transformation of its forces since World War II. This transformation process is shaping the military. Driving the transformation are new concepts, capabilities and organizations intended to ensure a strategically responsive, campaign-quality force to dominate in full-spectrum operations.

As part of this transformation, the Army will field selected future combat systems (FCS) capabilities to its operational forces through a concept called "spin outs." Spin outs accelerate the fielding of capabilities to today's modular forces before the first FCS brigade combat team (FBCT) is activated in 2015.

Spin Out 1 consists of two FCS technologies: unattended ground sensors (UGS) and the non-line-of-sight launch system (NLOS-LS). UGS is comprised of the urban UGS (U-UGS) and the tactical UGS (T-UGS). U-UGS is a hand-emplaced series of sensor nodes that allow Soldiers to monitor a variety of urban spaces, including cleared or closely clustered buildings. T-UGS, which is also hand-emplaced, is a series of sensor nodes that allow the commander to monitor a variety of different terrains.

The second technology and the focus of this article is NLOS-LS. This article provides an overview of NLOS-LS' capabilities and briefly describes its employment and integration into the Army Evaluation Task Force (AETF), a uniquely modified heavy brigade combat team (HBCT) at Fort Bliss, Texas.

NLOS-LS will be part of the FBCT's fires battalion, and, for the first time, the BCT commander will have a precision-guided munition (PGM) organic to his brigade in the form of a missile that can kill moving and other targets at a range of 40 kilometers.

AETF Initial Spin Out 1 work in 2008 consists of fielding prototypes for testing and evaluation. Assuming successful testing and evaluation of Spin Out 1, the capabilities will be fielded to current force units beginning in 2010.

The AETF's overall interactive development, integration and verification of Spin Out 1 capabilities will demonstrate the readiness to progress through additional spin out phases, ultimately, leading to the fielding of the FBCT in 2015.


Family of Medium Tactical Vehicles (FMTV) Truck with two Non-Line-of-Sight Launch System (NLOS-LS) Container Launch Units (CLU) (Photo by Major (Retired) Mark Laflamme)

The AETF. The creation of the AETF dates to December 2005 when the Chief of Staff approved Army Campaign Plan Decision Point 22. That decision designated an HBCT to evaluate FCS operational concepts and conduct testing of and training on FCS equipment at Fort Bliss. During that evaluation, the AETF will provide continuous feedback, enabling the Army to evaluate technologies and develop tactics, techniques and procedures (TTPs) for the new operational concepts and equipment.

Organization. The AETF was organized under an "exception modified table of organization and equipment" (E-MTOE) in Forces Command (FORSCOM) and then transitioned to the Training and Doctrine Command (TRADOC) on 16 March 2007. The intent is for the AETF to integrate the newly developed prototypes for FCS platforms and network capabilities into a fully functional fighting force.

The AETF will execute along three distinct lines of operations (LOOs) for the development of the FBCT. The AETF's LOOs are to support the evaluation of selected FCS spin out systems for fielding to the current force, to support the evaluation of FCS main program initiatives for production decisions and to convert the AETF structure to become the first FBCT.

The base design for AETF Spin Out 1 includes a headquarters, two maneuver battalions and a Field Artillery (FA) battalion.

Because of its spin-out focus, the AETF and its subordinate units are not

fully manned and equipped. The FBCT headquarters and one of the maneuver battalions (an Armor battalion) are the most populated units. The Armor battalion is made up of a tank company, a mechanized company and an engineer company.

Fires Battalion. Because the FA battalion is focused on testing the NLOS-LS, it will not have any of the howitzers normally found in a FBCT fires battalion. It will, however, have a battalion fire direction center (FDC) and the associated fire support personnel to support the FBCT headquarters.

All cannon fires will be simulated for Spin Out 1. The NLOS-LS section of the fires battalion (fielded in October 2007) will have a control cell and three families of medium tactical vehicles (FMTVs), each carrying two container launch units (CLUs). The remainder of the fires battalion and the brigade are populated to provide only the minimum essential material and personnel to support the main effort.

NLOS-LS. This fire support system is revolutionary. It gives the FBCT commander the ability to target precisely and attack point targets—armored and non-armored, moving and stationary, during the day, night and adverse weather—at extended ranges. As part of the fires battalion supporting the BCT, NLOS-LS adds an increased capability to what was a cannon-only organization with minimal additional force structure.

NLOS-LS is a self-contained launch system that is not vehicle-dependent and that can be fired from the ground, a vehicle or a trailer. The system consists of the launch unit, an on-board command and control capability and 15 individual containerized munitions, each with a precision attack missile (PAM).

The NLOS-LS receives its missions from an advanced FA tactical data system (AFATDS)-equipped command and control node that is part of the NLOS-LS section in Spin Out 1.

Precision Attack Missile (PAM). The missile has solid propellant, is launched vertically and has a variable flight profile, enabling it to be employed against a wide array of targets out to a range of 40 kilometers. The target location and description is loaded into the missile before launch; PAM uses global-positioning system (GPS) guidance (with inertial backup) to fly to the target location.

Equipped with an on-board radio, PAM receives target information and instructions while in flight and provides a terminal image (target picture) immediately before impact. If the observer communicates an updated target location and activity, the data can be sent to the missile in flight, further enabling the attack of moving targets.

PAM, a precision guided munition (PGM), is launched vertically from the ground, the back of a truck or a trailer and is effective against a variety of armored and non-armored targets from 40 kilometers away, including moving targets. (Art Courtesy of Raytheon RMS)

PAM searches the target area during the terminal portion of the flight and makes corrections to hit the target using its infrared (IR) seeker or by flying directly to the target guided by the observer's laser designator. A 12-pound shaped-charge warhead with fragmentation makes PAM effective against a variety of targets found on the battlefield.

Container Launch Unit (CLU). The CLU holds 15 individual, sealed munition containers, known as all-up-rounds (AURs). The CLU also has a computer and communications system in a similarly sized and shaped container. This system has all the subsystems required for mission processing and communications (to include antenna, self-location, weapon interface and power supply) along with intrusion detection when operating unattended.

The primary role of the CLU is to act as the missile transportation and firing platform as well as the pre-launch command and control link.

The CLU measures 45 inches by 45 inches at the base with a height of 69 inches and, when fully loaded, weighs approximately 3,250 pounds. Generic tie-downs are built in to allow any transport system with an adequate capacity to haul the CLU.

NLOS-LS Section. In Spin Out 1, the 11-man NLOS-LS section is composed of a section headquarters, a control cell for controlling and coordinating NLOS-LS missions and three firing teams. Each firing team uses an M1084A1 FMTV to transport two CLUs. The M1084A1 has on-board materiel-handling equipment to replace expended CLUs, as needed.

The section headquarters consists of a Military Occupational Specialty (MOS) 13D40 FA Automated Tactical Data Systems Specialist NLOS-LS section chief and a 13D10 driver operating out of a high-mobility multipurpose wheeled vehicle (HMMWV). MOS 13D was chosen for the section headquarters to augment the control cell as needed.

The current design of the control cell uses a rigid-wall shelter mounted on a HMMWV and is manned by the 13D30 NLOS-LS control cell chief, a 13D20 NLOS-LS fire control NCO and the 13D10 vehicle driver.

Two AFATDS terminals installed in the control cell process fire missions from the fires battalion FDC or other command and control nodes and control NLOS-LS operations. Each NLOS-LS team, which transports and maintains the CLUs, consists of an MOS 13B20 Cannon Crewmember NLOS-LS team leader and a 13B10 driver.

The team leader uses a removable control panel to interface with the CLU. This control panel communicates with the computer and communications system and allows the team leader to conduct maintenance and diagnostics on the CLU and resident missiles to place the CLU safely into and out of operation and to monitor fire missions as they are received and processed. Additionally, the removable control panel enables the team leader to perform a basic PAM fire mission, if required.

The NLOS-LS Soldier will use a waveform radio known as the PAM single-channel radio system (SCRS), until the joint tactical radio system (JTRS) becomes available later in Spin Out 1. PAM, the CLU and control cell will use the SCRS for NLOS-LS ground-to-ground and ground-to-air communications.

Communications between the fires battalion FDC and the control cell will be through standard single-channel ground and airborne radio system (SINCGARS) radios. When JTRS radios are added to the force, the radios will be able to link sensors and observers directly to a missile in flight.

Mission Processing. To take advantage of the flexibility found within NLOS-LS and the PAM missile, significant changes are being made to the forward observer system (FOS) and AFATDS software to process requests for fire. FOS is being modified to process the request for a precision munition, allowing the observer to specifically request PAM, select the engagement mode that PAM should use and specify the direction of approach the missile should take in its flight. Additionally, FOS will improve PAM's ability to attack moving targets by computing the target's speed and heading based on data received from the observer's laser rangefinder and automatically pass this information in the request for fires.

The control cell uses mission, meteorological (Met) and digital map data along with fire support coordinating measures (FSCM) to select the CLU that best supports the mission. As part of this process, AFATDS uses an effects optimization tool to plan a flight route for PAM that avoids busy air space and intervening terrain. For a laser-designated mission, the effects optimization tool automatically takes the observer's location into consideration to direct the missile along a course to acquire the reflected laser energy from the most advantageous angle—eliminating the need to compute observer-target angle and select a firing platform at the correct angle.

After determining the best flight route, the mission is sent from the control cell to the CLU. In addition to the flight route, the target description that was part of the observer's request for fire is provided to the missile before launch to ensure the IR seeker will look for the correct category of target.

NLOS-LS Control Cell

For moving targets, target speed and heading are also provided, enabling the missile to fly to a predicted intercept point, thus, increasing the probability that the missile's seeker will detect the target or reflected laser energy.

This capability represents a radical departure from the past because the observer adjusts fires *before* impact instead of after the fact. Also AFATDS and the effects optimization tool will provide the missile with no-fire areas (NFAs) and the observer's location to ensure the safety of friendly forces and non-combatants in the target area.

PAM's Flight. After launch, PAM flies along the prescribed flight route to the known or predicted target location. PAM communicates directly with the control cell, sending its position for display on the AFATDS operator's screen.

As the missile approaches the predicted location of a moving target, the observer sends an update of the target's location to the control cell. The control cell checks the data against the current FSCMs and then sends it to the missile in flight. PAM adjusts the final part of its flight to intercept the target and, just before impact, transmits a snapshot of the target with the time and location back to the control cell.

The Army quickly is realizing its transformation into a strategically responsive campaign-quality, full-spectrum force. Spin outs will bridge the gap between the current and future force by enabling today's Soldiers with tomorrow's capabilities—including NLOS-LS.

Chief Warrant Officer Four (Retired) Robert A. Nelson is the Future Force Lead Action Officer within the Future Force Integration and Concepts Division of the Future Development Integration Center (FDIC) at Fort Sill, Oklahoma. While on active duty, he was the Sensors and Targeting Lead for the Director of Combat Developments, also at Fort Sill. In previous assignments, he was a Radar Maintenance/Operations and Targeting Instructor for the Warrant Officer Basic and Advanced Courses at Fort Sill; a Radar, Targeting and Counterfire Operations Observer/Controller at the National Training Center (NTC), Fort Irwin, California; the Counterfire Officer in the S3 shop of the 1st Calvary Division Artillery, Fort Hood, Texas; and the Targeting Officer in the 41st Field Artillery (41 FA) Brigade in Germany.

Lieutenant Colonel William E. Field, Acquisition Corps (AC), is the Assistant Training and Doctrine Command (TRADOC) Capability Manager, Rocket and Missile Systems (TCM RAMS) for the Non-Line-of-Sight Launch System (NLOS-LS) at Fort Sill. Previous assignments include serving as the Assistant Project Manager for NLOS-LS and Assistant Product Manager for the High-Mobility Artillery Rocket System (HIMARS) and Multiple-Launch Rocket System (MLRS), both at Redstone Arsenal, Alabama; and Assistant TRADOC System Manager for HIMARS, and Chief of the Weapons and Munitions Branch in the FA School, both at Fort Sill. He commanded A Battery, 4th Battalion, 11th Field Artillery (A/4-11 FA), Fort Wainwright, Alaska, and served as the 2nd Platoon Leader in B/4-5 FA, 1st Infantry Division, during Operation Desert Storm (ODS) in the Gulf.

FA 131A Warrant Officers: A Career Update

82nd Airborne Division Q-37 Radar Section

By Chief Warrant Officer Four
Bruce D. Brandes

Soldiers of all grades have seen the landscape of the Field Artillery change drastically as a result of rapid transformation and the War on Terrorism (WOT). Nowhere have these changes been more profound than within the FA warrant officer (WO) corps. The overwhelming success of our Military Occupational Specialty (MOS) WO 131A Targeting Technicians has fueled progress.

Across the force, the demand for targeting officers is greater than ever before, surpassing the objectives and intentions of the architects of the targeting officer concept. Today, the roles and scope of responsibilities for 131As go well beyond anything previously envisioned—today's targeting officers must be able to reach across all aspects of military operations with the skills of a Pentathlete.

131A Role Expanded. In 1994, the role and scope of responsibilities of the MOS 131A Radar Technician formally were expanded to include targeting. Our predecessors envisioned an expert capable of fulfilling the requirements of the radar section leader as well as those of the targeting officer at all levels of command—filling positions previously held by captains, majors and lieutenant colonels. However, the 131As did not have the prerequisite technical expertise required to accomplish the mission.

The new design required 131As to be radar and targeting experts. The FA School had to develop training requirements, assemble qualified instructors and institutionalize a program of instruction (POI) to teach 131As to be targeting officers from the brigade to the corps levels.

At that time, many senior WOs chose not to embrace the changes and retired. Consequently, defining the role and scope of the new targeting technician was left largely to the junior warrant officers, beginning in 1994.

Almost immediately it became evident that the future of the 131A was to be linked to his role as a targeting expert rather than as a radar technician. Assignments as Q-36 or Q-37 Firefinder radar section leaders became developmental, and the pinnacle of a warrant officer's career shifted to targeting. Time spent serving as a radar section leader was a maturation period—which has served many of us well.

However, few 131A radar experts are left in the Army today. The reduction in radar technical skills is a natural consequence of technological advances in Firefinders, the introduction of other systems that can acquire enemy indirect fires and the growth in and shift to technicians who truly are experts in targeting.

The 131A is the staff representative the commander looks to develop, brief, train, automa te and participate in a highly efficient targeting process at all echelons. The 131A defines the commander's targeting process to achieve maximum efficiency of his resources.

Since 2004, the Army has increased the FA WO corps by 62 percent to support transformation (See Figure 1). The modular design of the Army's 76 brigade combat teams (BCTs) accounts

Year	WO	W3	W4	W5	Total
FY04	132	051	027	007	217
FY05	129	092	053	007	281
FY06	131	120	077	008	336
FY07	121	134	084	010	349

Figure 1: In just three years, the Field Artillery's Military Occupational Specialty (MOS) 131A Warrant Officers (WOs) have grown by 62 percent. With changes in future force structure, the numbers of 131As will continue to grow.

for most of the additional requirements, significantly increasing the total number of 131As required for each BCT. And the number of 131As is continuing to grow.

Current 131A Demand. The 131A has established his role as the expert in any targeting arena—resulting in calls from commanders across the Army for targeting technicians to support their operations. As a result, 131As now are serving in a range of positions and at every level of conventional and special operations commands (SOCOMs). So, despite the loss of the traditional radar section leader positions, starting in the Third Quarter of FY08, the FA WO corps will continue to grow. The modular force design includes four targeting technician position throughout the BCT, as shown in Figure 2. Prior to modularity, the brigades only had two 131A positions: the radar section leader and the brigade targeting officer.

Currently, the Fires Battle Lab at Fort Sill, Oklahoma, is testing the use of a 131A as a targeting officer in a BCT's fusion cell, which would be a fifth position for 131As in the BCTs. If implemented, the position is projected to begin showing up in the force about 2010.

Although 131As will no longer serve as radar section leaders, they will continue to play a vital role in managing radars.

1. Target Acquisition (TA) Platoon Leader
- Supervises the activities of the platoon.
- Coordinates for tactical meteorological (Met), survey and TA assets.
- Coordinates, security and force protection, logistics and administration for platoon assets.
- Monitors mission support requirements with in the BCT area.
- Supports the counterfire operations section in mission planning for platoon assets.

2. Fires Battalion Targeting Officer
- Uses the target selection standards (TSS) to develop enemy targets and suspected enemy targets.
- Analyzes and validates information from TA sources.
- Conducts and coordinates battle damage assessment (BDA).
- Helps in target production and processing.
- Provides the S2 TA analysis to support the intelligence preparation of the battlefield (IPB).
- Helps the S2 with the FA support plan (FASP), TA and plans for attached, organic and operational control (OPCON) TA assets.
- Provides guidance to the counterfire officer.

3. BCT Headquarters Target Analyst
- Collocates with intelligence, surveillance and reconnaissance (ISR) in the command post (CP) to develop targets.
- Facilitates rapid target engagement.
- Provides fire support warfighting considerations for the order of battle, IPB products, high-value target list (HVTL) and named areas of interest (NAIs).
- Provides input concerning TSS, the attack guidance matrix (AGM) and the high-payoff target list (HPTL).
- Provides time and accuracy requirements for target engagement systems.

4. BCT Targeting Officer
- Conducts lethal and nonlethal targeting.
- Participates in combat assessments.
- Provides targeting input into the military decision-making process (MDMP).
- Develops targeting and combat guidance.
- Ensures synchronization between sensors and delivery assets.
- Provides targeting considerations in the coordination and synchronization of interagency activities within the BCT's area of responsibility (AOR).

Figure 2: The modular force design of the brigade combat teams (BCTs) requires four MOS Warrant Officer 131A Targeting Technicians in each BCT, as shown here.

Today's WO's maturation process occurs during his initial assignments as the target acquisition (TA) platoon leader and then fires battalion targeting officer in a BCT. As a TA platoon leader, he will be responsible for the Q-36 and Q-37 Firefinders, the lightweight countermortar radars (LCMRs) and other radars—plus responsible for meteorology (Met) and survey.

The radar platoon leader position prepares the 131A to serve as a fires battalion targeting officer. In this position, he serves, essentially, as the battalion's counterfire officer, positioning the radars for the counterfire and other fights.

The professional maturation occurring during these initial assignments is essential for the 131A to serve at a BCT headquarters as the targeting officer.

WO Education System (WOES). WOES is evolving to support these force structure changes. At Fort Sill, the WO basic and advanced courses (WOBC and WOAC) both recently have undergone significant redesign. The courses now more accurately mirror the needs of the commanders in the field in WOT. These new courses are designed to ensure targeting technicians can succeed in full-spectrum operations and will evolve as necessary.

Getting these courses "right" depends on feedback from commanders, senior warrant officers and others in the field as well as on new or revised tactics, techniques and procedures (TTPs) reported by observer/controller (O/C) teams at the combat training centers (CTCs). To date, support from the field and CTCs has been tremendous.

The contents of the WOBC and WOAC have changed as well as the way the students are taught. The WOES courses' instruction now emphasizes developing critical thinking skills.

WOBC. The Assistant Commandant of the FA School stood down a WOAC class in January 2006 to redesign what is now the 17-week WOBC. The WOBC pilot program ends in June. As the WOBC design solidifies, it is important to note that most of the changes reflect input from the field rather than working groups operating in a vacuum at Fort Sill.

WOBC courses after June will be almost nothing like the classes of the past. Beginning in March, collateral damage estimation (CDE), targeting for precision-guided munitions (PGMs) and information operations (IO) become a part of the WOBC's core curriculum. Other information, ranging from

electronic warfare (EW) to defeating suicide bombers and improvised explosive devices (IEDs) in a counterinsurgency (COIN) environment, are being integrated into classes.

WOAC. WOAC was redesigned by a Tiger Team and representatives from the field from May to July 2006. The pilot WOAC began in July.

The nine-week WOAC now includes CDE, precision targeting and the targeting folders, joint automated deep operations coordination system (JADOCs) and, significantly, the two-week Joint Fires and Effects Course (JOFEC).

Future WOBCs and WOACs will continue to be refined via feedback from the field, emphasizing new systems and critical thinking. In the near future, the FA School plans to install security Internet protocol routing (SIPRNET) access in all WOBC and WOAC classrooms for student discussions with 131As and others in Iraq and Afghanistan.

In addition to the institutional redesign, the Warrant Officer Career Management Section of the FA Branch in the Officer Personnel Management System (OPMS) Division, Alexandria, Virginia, is working to increase developmental opportunities for the FA targeting officer as he needs them. Assignment-oriented training (AOT) is ensuring 131As are getting the right training at the right time.

Minimum Prerequisites:

- Be in the rank of staff sergeant (E6) or higher.
- Hold MOS 13B Cannon Crewmember, 13C Tactical Automated Fire Control Systems Specialist, 13D FA Tactical Data Systems Specialist, 13E Cannon Fire Direction Specialist, 13F Fire Support Specialist, 13M Multiple-Launch Rocket System (MLRS) Crewmember, 13P MLRS Operations/Fire Direction Specialist, 13R FA Firefinder Radar Operator, 13S FA Surveyor or 13W FA Meteorological Crewmember. In addition, personnel from MOS 94M Radar Repairer or 11C Indirect Fire Infantryman who have at least five years of experience in a "feeder" MOS also may apply.
- Have a minimum of two years in a supervisory position as documented by NCO evaluation reports (NCOERs) at the section chief level or higher.
- Have a score of 110 or higher in the Armed Services Vocational Aptitude Battery (ASVAB) areas of FA and electronics.
- Have a written recommendation from an active duty chief warrant officer three (CW3) or higher who holds the 131A MOS.
- Have no more than 12 years active federal service (AFS); if you have more than 12 years of AFS, the Department of the Army (DA) must approve your application.

Preferred Qualifications (Minimum Plus):

- Have more than two years in a supervisory position as documented by NCOERs.
- Have six hours of English and six hours of math from an accredited college or university.

Figure 3: Prerequisites for Becoming an MOS 131A Targeting Technician Warrant Officer

Also, WOAC has been "decoupled" from promotions, which allows targeting technicians to attend WOAC before being assigned to higher levels in the BCTs. The 131A Career Managers are sending FA WOs to joint schools and for advanced civilian education, helping to meet the needs of today's ever-changing and fast-paced Army.

Future threats undoubtedly will create new demands and affect the targeting technician's scope of responsibilities. The 131A of the future will be adaptive, innovative, grounded in doctrine and, most importantly, the Army's targeting expert. 131As will be Pentathletes capable of serving as targeting experts from the BCT level and up with the institutional knowledge and experience to ensure their success.

The prerequisites to become a 131A warrant officer are shown in Figure 3. If readers have questions about this article or applying to become a 131A, they can contact the author via email at bruce.brandes@us.army.mil or telephonically at DSN 639-3782 or commercial 580-442-3782.

The Q-37 Firefinder radar section emplaces at the Joint Readiness Training Center (JRTC), Fort Polk, Louisiana, during the 82nd Airborne Division's rotation.

Chief Warrant Officer Four Bruce D. Brandes, Military Occupational Specialty (MOS) 131A Targeting Technician, is the Deputy Director of the Field Artillery Proponency Office (FAPO) and Chief Warrant Officer of the FA Branch at Fort Sill, Oklahoma. He has served in the Army for more than 23 years, including two years as the Officer-in-Charge (OIC) of the Warrant Officer School at Fort Sill; three years as the Division Targeting Officer with the 1st Infantry Division in Germany; three years as a Brigade Targeting Officer with the 2nd Brigade, 101st Airborne Division (Air Assault) at Fort Campbell, Kentucky; and two years on the Q-36 and Q-37 Firefinder radars. While serving in the enlisted ranks, Chief Brandes was an MOS 13E Cannon Fire Direction Specialist at Fort Bragg, North Carolina, among other assignments.

GMLRS Unitary Battle Drill and the Ready First Combat Team

By Captain Andrew D. Lantz and Major Paul C. Weyrauch

1st Brigade Combat Team (1st BCT), 1st Armored Division, or the *Ready First Combat Team,* with the 2nd Battalion, 3rd Field Artillery (2-3 FA) in direct support (DS), deployed to Tal Afar in Western Ninewa Province in Operation Iraqi Freedom (OIF) V. The BCT then moved south to Ar Ramadi to relieve the 2nd Brigade, 28th Infantry Division (2-28 ID), Pennsylvania Army National Guard (PAARNG).

Because of the brigade's experience in Tal Afar, we were able to contrast the stark differences in the threat that can exist throughout the Iraqi theater of operations. These differences required us to employ new tactics and use new weapons, such as the M31 guided multiple-launch rocket system (GMLRS) unitary—a highly effective munition in the urban terrain of Ramadi.

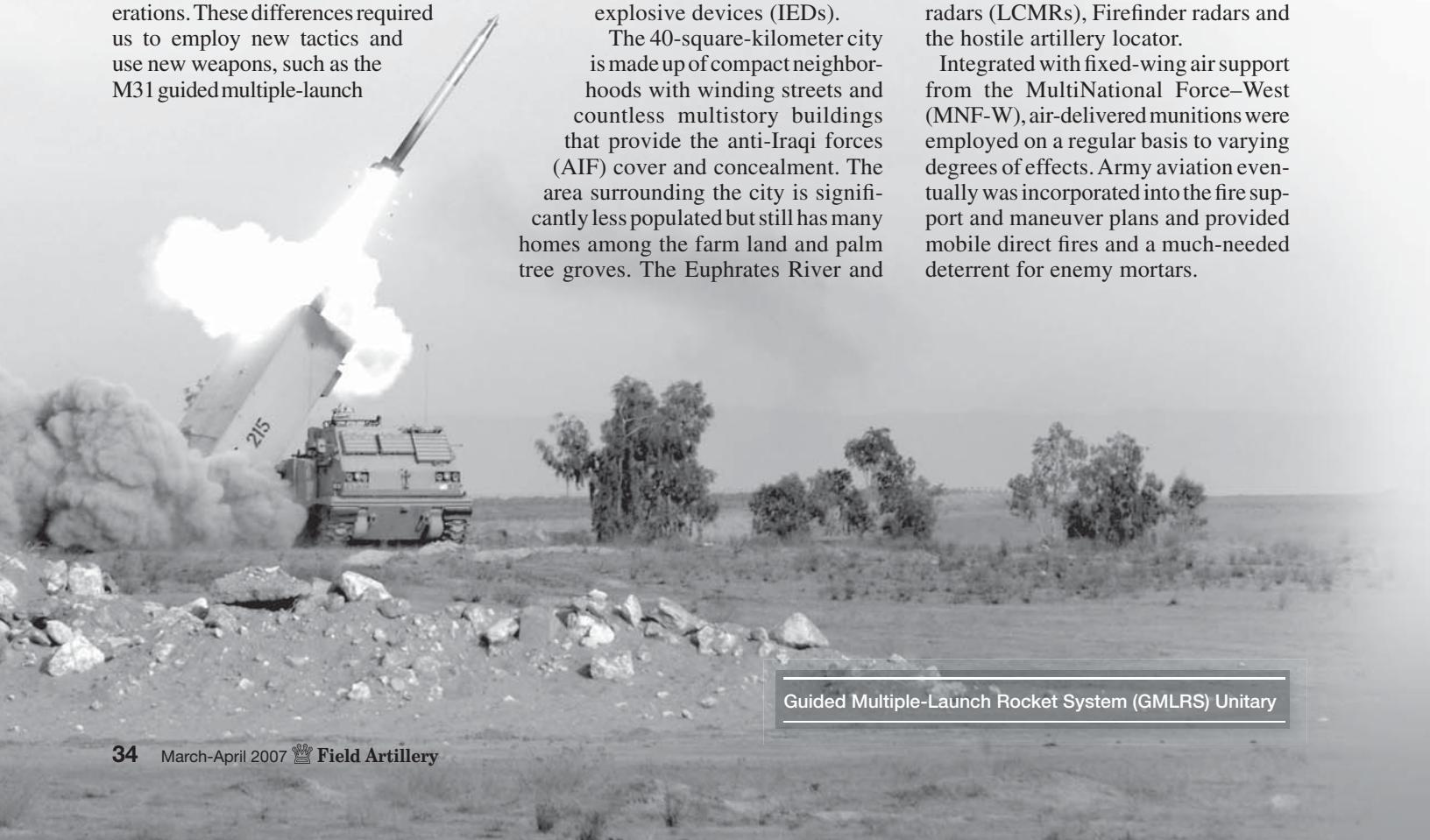
The Threat and Terrain. While the brigade's area of operations (AO) spanned 180 kilometers north to south, the focus for fires was the provincial capital city of Ramadi. The daily threat to Coalition Forces included small arms fire, improvised rocket launchers and, of course, improvised explosive devices (IEDs).

The 40-square-kilometer city is made up of compact neighborhoods with winding streets and countless multistory buildings that provide the anti-Iraqi forces (AIF) cover and concealment. The area surrounding the city is significantly less populated but still has many homes among the farm land and palm tree groves. The Euphrates River and man-made Nassar canal compartmentalize the city but are not wide enough to seriously limit crossing.

Within the city, the enemy often synchronized attacks from multiple locations on Coalition Forces' patrols and fixed positions. AIF mortar and rocket teams fired from a variety of locations, both inside and outside urban areas.

Ramadi presented a significant increase in AIF activity and required the 1st BCT to employ more ground-fire support systems in addition to its DS battery. Such systems included 120-mm mortars, five lightweight countermortar radars (LCMRs), Firefinder radars and the hostile artillery locator.

Integrated with fixed-wing air support from the MultiNational Force–West (MNF-W), air-delivered munitions were employed on a regular basis to varying degrees of effects. Army aviation eventually was incorporated into the fire support and maneuver plans and provided mobile direct fires and a much-needed deterrent for enemy mortars.



Guided Multiple-Launch Rocket System (GMLRS) Unitary

No single asset proved to be the ultimate solution.

1st BCT's Introduction to GMLRS. A new capability available to 1st BCT upon arriving in Ramadi was the GMLRS unitary rocket. Providing general support (GS) fires in support of 2-28 ID, A/2-20 FA (MLRS) employed the M31 rocket. The M31 is a global positioning system (GPS)–guided rocket capable of delivering a 200-pound unitary warhead at ranges of 15 to 70 kilometers with extreme accuracy. The GMLRS unitary consistently outperformed its circular error probable (CEP) accuracy requirements during combat operations in Ramadi, making it an effective weapon in the dense urban terrain.

GMLRS unitary's high angle of fall and increased accuracy over conventional surface-to-surface munitions reduce the risk estimate distances (REDs) and collateral damage estimates (CDEs), making GMLRS unitary an extremely effective weapon in an urban environment. With most targets falling within 50 to 60 kilometers of the firing battery, Ramadi was in an ideal location to employ the munition.

What soon proved to be the "weapon of choice" in situations with troops in contact (TIC), GMLRS unitary required new procedures and the education of the maneuver task forces about this unfamiliar fire support weapon. The M31 was employed in MNF-W with limited use by the 3rd Armored Cavalry Regiment (ACR) during Operation Restoring Rights in Tal Afar and the 101st Airborne Division (Air Assault) in MultiNational Division-North (MND-N). The system was an unknown to the 1st BCT. We were fortunate to assume a system established by 2-28 ID and A/2-20 FA that allowed us to refine the process and end situations with TIC, usually with one rocket.

Target Selection and Fire Planning. Incorporating GMLRS unitary into the overall brigade plan and task force operations, as with any other fire support weapon, was important from the start. Including it in the attack guidance matrix (AGM) and understanding how to employ the munition ensured it did not get treated as a novelty but as a viable, timely solution for certain targets. Once trust in the weapon was established, maneuver commanders were as eager to employ it as any other system.

The desired effects—suppression, neutralization or destruction—must be considered for all indirect systems. GMLRS unitary is suited for precision targets making it ideal for TIC or the pre-planned destruction of a building or enemy weapon system. It is not suitable for counterfire or terrain denial fires, and its longer time-of-flight (TOF) for targets at greater distances makes it less desirable to engage fleeing targets.

For counterfire missions in the 1st BCT, speed was more important than pin-point accuracy, so we engaged counterfire targets with cannons or mortars. In terrain denial missions, the desired effects always could be achieved with less expensive high-explosive rounds.

Planning for GMLRS unitary from an observer or end-user standpoint is not much different than planning for fixed-wing or even cannon-delivered munitions. In selecting the M31, decision makers from the observer to the brigade commander must understand its effects on targets.

With its relatively low yield, the M31 can destroy certain parts of a building without reducing the entire structure. When fired using a time-delay fuze setting, GMLRS unitary has a one-meter penetration, allowing it to breach the roof of a building and detonate on the floors below without destroying the structure.

It can be fired in close proximity to troops with minimal chance of collateral damage to personnel or structures. The RED for GMLRS unitary is lower than the joint direct attack munition (JDAM) precision-guided munitions (PGMs): the guided bomb unit (GBU)-31 with a 2000-pound warhead, the GBU-32 with a 1,000-pound warhead and GBU-38 with a 500-pound warhead. Additionally, a mission can employ launchers against multiple targets to counter more than one threat.

All this is possible, however, only with precision target location.

GMLRS Unitary Battle Drill. As with any fire support weapon, the more preparation before employing it, the more effective the fire mission is. This does not mean *all* targets must be pre-planned, but it does mean processes should be rehearsed, and all nodes should be prepared to execute their tasks. If properly rehearsed and executed by a proficient sensor-to-shooter team, the process from request to "shot" can be executed within six minutes.

Despite the fact that GMLRS is a GS asset, regular, direct communications between the 1st BCT and the firing battery was essential. Both units must understand and constantly rehearse the battle drill.

When engaging targets with PGMs, accurate target location, to include altitude, is paramount. (When targeting buildings, the feature height or a three-dimensional target grid is critical.)

The target location error (TLE) is the key determinate of the risk to troops and collateral damage estimate. Minimizing the TLE is the difference between a target hit and a miss.

Because even minor inaccuracies can lead to tragic results, most grids are mensurated. (Mensuration determines the exact three-dimensional target location by applying mathematical algorithms to compare two images within the digital point position database, or DPPDB, of the same terrain iteratively until they match.)

For target mensuration, certain software must be employed for both planned and unplanned targets. Targeting specialists use systems based on the DPPDB, such as Dewdrop, Raindrop, and Rainstorm, to determine the most accurate target location. These assets are typically at the strategic level, however, and are not practical for use against time-sensitive targets (TSTs) or to support TIC.

In those situations, the precision strike suite-special operations forces (PSS-SOF) software provides data that is accurate enough to employ both Army and Air Force PGMs. See the articles "FOS with PSS Integrated—Nowhere for the Enemy to Hide" by Milton B. Smith in the September-October 2006 edition and "FA PGMs—Revolutionizing Fires for the Ground Force Commander" by Colonel Gary S. Kinne, et al. in the May-June 2006 edition.

We did not arrive in Ramadi with the required software or training, but we used the expertise of the Marine air/naval gunfire liaison company (ANGLICO) forward air controllers (FACs) and Air Force joint terminal attack controller (JTAC) teams that operated with every maneuver task force. The JTACs provided on-the-scene targeting data using PSS-SOF.

Without this rapid method of providing a precise grid, verification of the target location would have increased the mission processing time significantly.

Once the observer sends the target grid, the battalion fire direction center (FDC) or brigade fires and effects

During testing in Iraq, GMLRS unitary hits the building on the far side, leaving the near side of the building intact.

coordination cell (FECC) transmits a digital call-for-fire (CFF) via the advanced FA tactical data system (AFATDS) to the firing battery FDC. Upon receipt of the fire mission, the battery FDC calculates and reports the TOF and its maximum ordinate (MO), which is the data required to initiate air clearances. The data also is transmitted to the requesting unit's AFATDS.

The firing battery requires a total processing time of three to four minutes from the time the CFF is sent until the report of "Ready" by the launcher. Upon the command to "Fire," the launcher takes an additional 12 seconds to update the rocket's GPS before firing.

A mensurated (or PSS-SOF) grid is not required to initiate the GMLRS unitary CFF. If target mensuration is not available immediately, the observer can initiate a GMLRS unitary request with an approximate target location.

Once the mission is sent to the firing unit, the requestor can send refinements to the target grid without generating a new mission, provided those changes are within 100 mils of the original target laterally along the gun-target line. If already laid on an approximate grid, the launcher only will take an additional 25 seconds to relay on the new target grid, once the PGM receives the update. This is particularly useful in responding to TIC situations or engaging targets of opportunity—allowing the maneuver commander the flexibility to respond rapidly to changes in the tactical situation.

Initiating the CFF immediately provides the firing battery the data required to compute the MO and TOF. This allows the requesting unit to begin the air clearance process earlier, conducting it concurrent with the target's mensuration (or PSS-SOF calculation) and the launcher laying process.

Another technique to speed air clearance is to coordinate with the GMLRS unitary firing battery to predetermine the approximate TOF and MO data for set ranges. This information can be used to create a "cheat sheet" for the requesting unit to determine the range-to-target and begin air clearances based on the predetermined data. This technique can save valuable time, especially given the missile's long flight path and high altitude that, typically, requires clearance at higher echelons.

Once the airspace is cleared, the command to "Fire" is sent digitally via AFATDS to the firing battery.

Because these missions are never conducted in a "vacuum," requesting units must retain flexibility within their battle drill and rehearse for possible eventualities. FDCs and fire support elements (FSEs) must be able to react to changes and not sacrifice the firing capabilities of other systems while conducting GMLRS unitary missions. The ability to conduct counterfire and engage other targets with cannon, mortar, aviation or GMLRS unitary assets *simultaneously* is extremely important.

Guidance criteria can be set within AFATDS to facilitate simultaneous missions. However, there is no substitute for training.

Conclusion. This article is by no means an attempt to write doctrine or dictate procedure. The intent is to share the lessons we learned during our deployment and introduce FA professionals who may be unfamiliar with GMLRS unitary to this highly effective PGM.

GMLRS unitary proved its worth to the 1st BCT in Ramadi and will be an asset in other theaters. It should be included or, at least, considered in fire support plans.

During the year of our deployment, the I Marine Expeditionary Force (IMEF) oversaw the fight in MNF-W's AO. IMEF documented that 80 percent of the air munitions had effects on target as opposed to 98 percent of all GMLRS unitary fires—the highest of any fire support system in the AO.

The role of Artillery in the Army has changed drastically in the last 10 years and continues to change. By the time of this article's publication, the 155-mm Excalibur unitary may be in use in the Iraqi theater of operations. Employed along side GMLRS unitary, DS PGM cannon fires will complement any maneuver fire plan.

When much of the fighting takes place in populated, urban areas against an enemy who blends in with friendly locals, traditional artillery rounds are less applicable. Adapting to new technology and learning to implement it in support of the maneuver commander is absolutely necessary.

As fire supporters, we must learn to integrate new technology and not lose sight of the basics. Artillerymen must expand, not shift, their skills. The five requirements for accurate predicted fire, sound targeting and professional tactical and technical fire direction must be maintained and applied to every traditional and PGM fire mission.

As long as lethal operations continue in Iraq, commanders will require lethal fires. It is up to the Artillerymen to ensure these fires are timely and accurate and provide the desired effects. They now have the option of GMLRS unitary in urban operations.

Captain Andrew D. Lantz is the Fire Direction Officer (FDO) for 2nd Battalion, 3rd Field Artillery (2-3 FA), 1st Brigade, 1st Armored Division, in Giessen, Germany, currently deployed in support of Operation Iraqi Freedom (OIF) 05-07. He also has served as a Battery FDO, Battalion Ammunition Officer and Service Battery Executive Officer in 2-3 FA. Captain Lantz has a BA in History from Purdue University at West Lafayette, Indiana.

Major Paul C. Weyrauch is the S3 for 2-3 FA. In his previous assignment he was the Fire Support Officer (FSO) for 1st Brigade, 1st Armored Division during OIF 05-07. His other assignments include Squadron FSO of 1-7 Cav; Commander of B/3-82 FA; and Assistant S3 for 3-82 FA, all in the 1st Cavalry Division at Fort Hood, Texas. He holds an MA in Campaign Planning and Strategy from the Joint Advanced Warfighting School at the Joint Forces Staff College at Norfolk, Virginia.

EDITOR'S Bully Pulpit

By Patrecia Slayden Hollis

Although I have been the Editor-in-Chief of *Field Artillery* for more than 11 years (eight more as Managing Editor), I have never used my prerogative to editorialize in the magazine—that is, until now. I am stepping up to the Bully Pulpit to give you an Editor's memoirs and musings as I publish the last edition of *Field Artillery* after 90 years of almost continuous editions and as I prepare to retire on 31 July.

The next magazine, May-June 2007, will be the *Fires* Bulletin as the *Field Artillery* and *Air Defense Artillery* Bulletins come together as the first of the Base Realignment and Closures (BRAC)-directed mergers of branch professional magazines.

During the past 20 years, I have had the pleasure of knowing many outstanding Soldiers, Marines and their leaders—mostly Field Artillerymen—and watched my former Communication Skills students from the 1986 and 1987 FA Captain's Career Courses grow up to become colonels and generals. I have had tremendous experiences putting out a magazine for the *King of Battle*.

Magazine Interviews to Remember. As your Editor, I have had incredible opportunities to interview more than 80 of the most senior Army, Marine and Air Force leaders and a few international leaders—plus several junior veterans who are heroes for our "A Soldier's Story" series. Among the many memorable interviews, I relate a story or two.

I interviewed General (Retired) Walter T. (Dutch) Kerwin, Jr., a Redleg and former Vice Chief of Staff of the Army, for the August 1993 history edition during a working lunch at the 1993 Senior Field Artillery Conference sponsored by Chief of Field Artillery Major General Fred F. Marty. General Marty had asked General Kerwin to be back for the early afternoon discussion of massing fires, an area of expertise of General Kerwin's. During World War II at Anzio Beachhead, then Lieutenant Colonel Kerwin's corps commander asked him to coordinate the massed fires of 28 battalions from multiple divisions, fires that ultimately had a significant impact on securing the beachhead.

During the interview, General Kerwin began answering every question at length—I had sent him the questions in advance, and he had made notes on all the points he wanted to cover per question. About an hour into the interview, I suggested we pick the most important questions to answer from the many remaining in an effort to return General Kerwin to the conference for the early afternoon session. His response—"*Hell*, no! No one ever asks me to tell my war stories, and I am not leaving here until I have told them *all!*" Three and one-half hours later, the interview concluded.

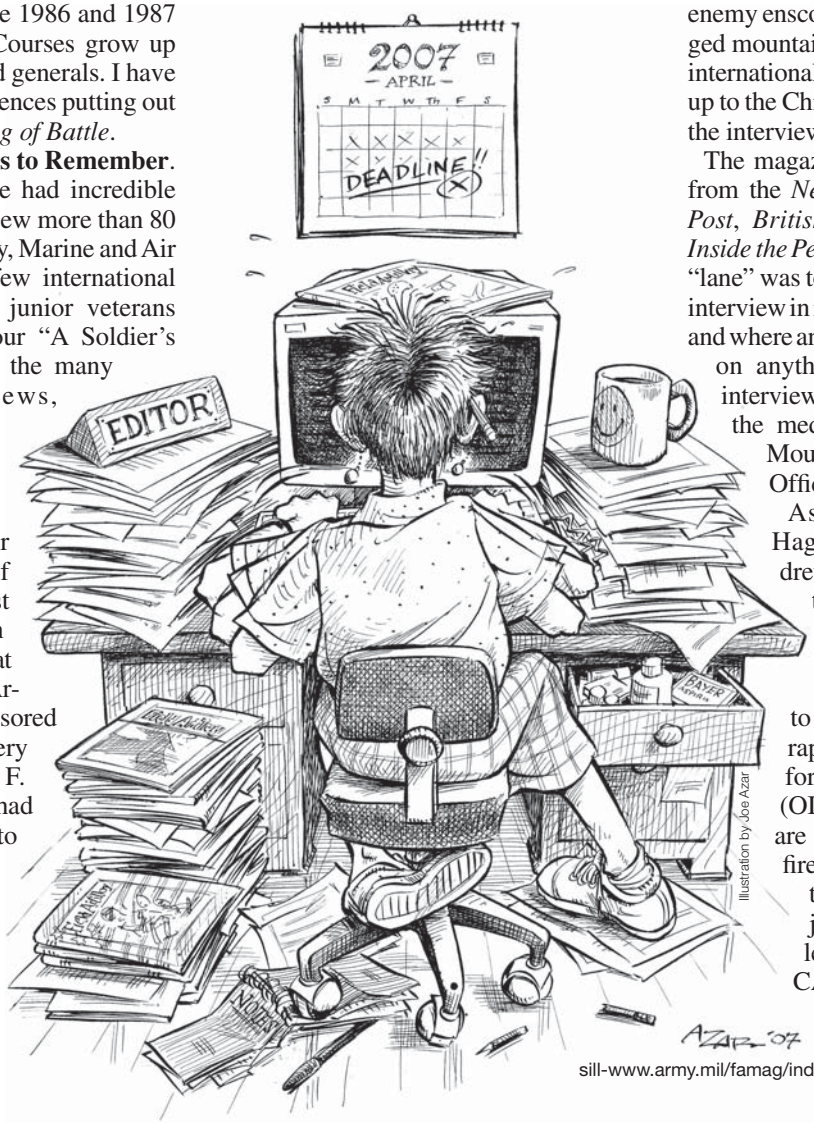


Illustration by Joe Azar

Interviews usually take about three magazine pages. His interview, which was packed with fascinating World War II, Korean and Vietnam war stories, required (and got) five magazine pages.

The interview with then Major General Franklin L. (Buster) Hagenbeck, Commanding General of the 10th Mountain Division and Coalition Forces in Operation Anaconda in Afghanistan, was in the September-October 2002 edition. To say the least, it was memorable.

In the interview, General Hagenbeck criticized the US Air Force's close air support (CAS) for Operation Anaconda and the lack of enough enlisted terminal attack controllers (ETACs) to control CAS for the platoon-level fight. Operation Anaconda was complicated by the fact that the Army had not allowed the 10th Division to take any of its howitzers to Afghanistan, only mortars, which were pretty much ineffective against the enemy ensconced in the caves in the rugged mountainous terrain. As aired in the international media, the Air Force, right up to the Chief of Staff, was offended by the interview.

The magazine was flooded with calls from the *New York Times*, *Washington Post*, *British Broadcasting Company*, *Inside the Pentagon* and other media. My "lane" was to tell the media only that the interview in its entirety was posted online and where and not to interpret or expound on anything the general said—the interview could "speak" for itself or the media could contact the 10th Mountain Division Public Affairs Officer for further clarification.

As it turned out, General Hagenbeck's candid remarks drew the Army and Air Force to the table to solve CAS problems, some of which were due to the Air Force and some of which were due to the Army. The two services rapidly resolved problems before Operation Iraqi Freedom (OIF) kicked off, and today we are growing more capable joint fires observers (JFOs) down to the platoon level and enough joint terminal attack controllers (JTACs) to accommodate CAS terminal control down to the company level. By print-

ing the issues Major General Hagenbeck discussed, the magazine played a part in the joint resolution of CAS problems.

Later, I interviewed then Major General Peter (Pete) W. Chiarelli at Fort Hood, Texas, as the 1st Cavalry Division Commander returning from Iraq (September-October 2005 edition). With a twinkle in his eye, the first thing he said was, "I just want to make clear right up front in this interview that my Air Force CAS in Iraq was *outstanding* and that I had no problems whatsoever with the Air Force." My response (with a laugh): "Too bad, Sir. Could be good for your career as Major General Hagenbeck has been picked up for his *third* star," to which he laughed. (General Chiarelli also got his third star.)

My most fascinating interviews include one recent one with Lieutenant General John F. Sattler, Commander of US Marine Forces in Central Command (CENTCOM) and the I Marine Expeditionary Force plus all Coalition Forces in the Battle of Fallujah II (March-April 2006 edition). General Sattler talked about Phase IV operations during Fallujah II, operations that the media did not cover while it was criticizing the Army and Marine Corps for being better at breaking things in combat rather than reconstructing them in stability operations.

Another of the more fascinating interviews was the one with Lieutenant General (Retired) Harold (Hal) G. Moore, co-author of *We Were Soldiers Once… and Young*. He discussed the November 1965 Battle of Ia Drang in Vietnam in which his 1st Battalion, 7th Cavalry, 1st Cavalry Division, was outnumbered 10 to one while fighting North Vietnamese Regulars. In the interview (July-August 1999), he discussed not only the battle, but also what he should have done that he did not.

These interviews in editions of *Field Artillery* are online in "Past Editions" at sill-www.army.mil/famag/index.asp. By the end of June, the magazine's online archives will have all editions online—from the first magazine, January-March 1911, to the last, March-April 2007—that are easily searchable via a Google Mini device and downloadable using minimum bandwidth from anywhere in the world.

Side Trips. On magazine missions, I have traveled around the world—to Korea; all over Germany; into Bosnia a few months after the 1st Armored Division entered the country; to the Pentagon, the Pentagon, the Pentagon; and to such "garden spots" as "downtown" 29 Palms and the National Training Center (NTC) in California—I also have "swung in on a grapevine" to the Joint Readiness Training Center in (JRTC) in Louisiana several times. I once traveled to the Pacific Command Headquarters for a magazine interview in *Hawaii in January*—a complete aberration. Local FA commanders (or senior artillerymen) and command sergeants majors often took me on fantastic "side trip" adventures while I was in their areas.

In my mind's eye (aided by night-vision goggles), I still can see the 82nd Division paratroopers dropping against the night sky and in whisper silence, wriggling free of their chutes flat in the grass on Drop Zone (DZ) Normandy at Fort Bragg, North Carolina. I was on DZ Normandy for a "mass tactical" jump and, after the equipment was air dropped, stood out on the DZ with paratroopers landing all around me. I then witnessed the 82nd Division Artillery lay the M119 howitzers, hump 105-mm rounds and live fire just minutes after the equipment and rounds landed. Quite impressive.

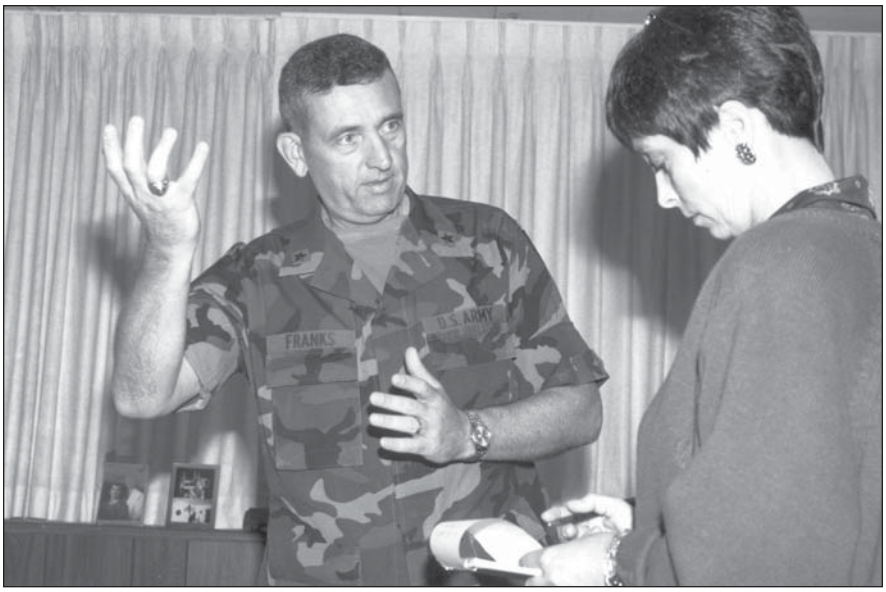
I can see the innocent-looking faces of the Bosnian people along the road in 1996, peering in curiosity at the United States Army (and me), wearing flack vests and Kevlar helmets, passing through their villages in a five-vehicle convoy. I was in Bosnia for four days to conduct an interview with the Commanding General of the 2nd Armored Division just months after the division crossed the Sava River into Bosnia.

I remember wondering how these beautiful people—Bosnian, Croatian and Muslim living in the same villages—could have warred with each other for more than 600 years. As I watched horse-drawn agriculture in action, which I had read was Bosnia's main economic business, I realized how much I take for granted in the US.

I remember what fun it was to cross the high desert in a high-mobility multipurpose wheeled vehicle (HMMWV) as a "Right-Seat-Ride" with a crusty, weathered-faced warrior, Wolf 07, during a force-on-force engagement at the NTC at Fort Irwin. Neither before nor since have I had so much dust and grime embedded in every pore and orifice of my body as that day of war at the NTC.

I also remember my convoy being "strafed" by an Air Force A-10 during "major combat operations" at the JRTC at Fort Polk and watching the M119 howitzers live fire in rapid response to calls-for-fire.

At the Combat Maneuver Training Center (CMTC) in Hohenfels, Germany, in the middle of a frigid February night, I watched force-on-force combat while wearing night-vision goggles from a HMMWV driving in black-out mode. Because I had come to the CMTC unprepared for combat operations, I borrowed rather *large* web and cold weather gear from a Redleg friend to



The Editor interviews then Brigadier General Tommy R. Franks for the first time in 1991. General Franks, the new Assistant Commandant of the Field Artillery School, had just returned from combat in the Gulf as the Assistant Division Commander of the 1st Cavalry Division in Operation Desert Storm (ODS). The interview, "1st Cav in Desert Storm: Deception, Firepower and Movement," ran in the June 1991 edition.

go to war, making me appear more like a "Private Benjamin" swallowed in gear than the Field Artillery's Editor, representing the branch with any dignity. That night, our four-wheeled-independent-suspension HMMWV, which was fairly new to the force, crossed some amazing crevices on that frozen terrain, each wheel doing its own thing.

But perhaps my most memorable experience at one of our dirt combat training centers (CTCs) was my mines awareness training at the CMTC that was required before I could go into Bosnia. For three days of training, I wore fatigues, combat boots, flack vest and Kevlar helmet as part of the "Oldies Platoon," composed of individual ready replacement military police NCOs (and me). In platoon formation, we marched to and from class and up and down hills to and from breakfast, lunch and dinner. I gained an "inside" appreciation for what Soldiers go through during training and the Army adage "Hurry up and wait."

The first day our CMTC instructors force marched us several miles out to a firing area at the (CMTC) and exploded a mine under a five-ton truck to give us an appreciation for the destructive power of mines. When the mine exploded, the truck jumped and rattled, making the Oldies Platoon jump also.

The NCO in formation next to me expressed surprise that I had not jumped. I explained that I was from the Field Artillery Center at Fort Sill, Oklahoma, and on more than one occasion, I had seen Copperhead or sense and destroy armor (SADARM) artillery projectiles send major chunks of main battle tanks flying in all directions or entire mountain sides destroyed by massed fires. He just nodded.

The last day of the training culminated in a squad lane training exercise to test our total skills. During the lane, I spotted a trip wire for one mine and the chokepoint of a narrowed path and bridge for another mine emplacement, initially making me a valued member of my squad. However, my credibility took a beating when we had to react to an infantry attack and fall back one at a time, covering each other with rifle fire as we went.

Because I was not qualified on an M-16, even firing blanks, I had to hold my hands up to simulate the rifle and yell "ratta-tat-tat" to indicate the covering fire I was providing. Somehow that took away from the realism of the training and my squad's confidence in my ability to protect the force.

1. Know your branch and its contributions to the joint force.

(a.) If one knows the force allocation rules and what Field Artillery did in battle where and when, then one knows how the battle unfolded.

(b.) If one knows the allocation rules and the sizes and locations of FA units around the world, then one knows the general sizes, configurations and locations of ground forces around the world.

2. The Army will change a new acronym a minimum of three times. For example, first we had stability and support operations (SASO); then stability operations and support operations (SOSO), which needed editing; then back to SASO; on to stability and reconstruction operations (S&RO, also acronymed as SRO) and now have stability operations. GWOT stands for Global War on Terrorism, which recently has been changed to WOT: the War on Terrorism. (WOT is that all about?) Two more changes are due.

3. Never allow an author to refer to GWOT (or WOT) as the Global War on Terror (vice Terrorism) or the first fire mission to win the war will have to be to mass fires on Hollywood.

4. Don't allow Field Artillerymen more than one full-page matrix and 10 smaller matrices per three-page magazine article.

5. The weakness of an article is in direct proportion to the author's strength and volume of praise for it.

6. Don't let authors write long, long sentences or use the first person "I"—unless you are the Editor writing reminiscences.

7. Never let an author use "Nerbs" (nouns as verbs), unless you are the Editor and the Nerb ("acronymed") is perfectly clear.

8. Allow authors to "push the envelope" with their articles' contents—even when, in hindsight, an occasional article moves into "stupid."

9. When "doctoring" an article, first do no harm.

(a.) Know the limitations of medical science.

(b.) When you must euthanize an article, do it quickly and humanely and move on.

10. Don't print a battalion commander's unedited article after he directs you not to change a word or spell out acronyms because he wrote the article for other battalion commanders who will understand; instead, tell him to write a letter to the other battalion commanders and enclose the manuscript.

Field Artillery Magazine Editor's Rules

Other Reminiscences. I remember the 1991 satellite telephone call from Field Artillerymen, former authors and friends, who had stopped at the Iraqi border and decided to call "The Journal" after the President declared the Operation Desert Storm's (ODS') 100-hour war over. Their voices were hoarse and broken sounding because they had been moving so fast the previous 24 hours that they had had to choose between resupply of water *or* food *or* rockets. They had chosen rockets.

We still have a Christmas card fabricated from a meals-ready-to-eat (MRE) box for "Chocolate Nut Cake, Net Weight: 3.2 Ounces" sent to us from a Redleg in ODS. It is framed and on the wall.

I remember the 2003 satellite call from the 3rd Infantry Division Artillery Commander shortly after the cessation of major combat operations in Operation Iraqi Freedom (OIF), outlining the stories his Redlegs already were writing for the magazine. With the rapid influx of articles from Field Artillerymen in the 3rd, 101st and 82nd Divisions; the 11th Marines; and V Corps Artillery; and the willingness of the Commanding General of V Corps and the Assistant Division Commander of the 3rd Division to be interviewed, we published the "Operation Iraqi Freedom" magazine just a few months after the war ended—September-October 2003.

Shortly after the edition came out, Chief of Field Artillery then Brigadier General David P. Valcourt visited Israel. He reported that the Israelis, who had been quiet and had "kept their heads down" during OIF, had taken their artillery's copy of our OIF magazine,

made photocopies of it and passed it throughout the Israeli Army as the first comprehensive military lay down of what happened in the war. (See Corollary (a.) of Editor's Rule Number 1 in the figure on Page 39.)

I remember the time a young captain called the magazine and asked to speak to the Editor about an article he was sending for publication consideration. I got on the phone and said I was the Editor. The captain paused, recognizing that my voice was that of a woman, and said, "*No*, I want to talk to who *really* makes the decisions about what is published in the magazine." I paused and responded, "Captain, what part of the word 'Editor' don't you understand?" He paused and then said, "*Alright then*. Let me tell you how good my article is…."

I ended up not publishing the article; my decision was because Editor's Rule Number 5 had proven true once again. (See the figure.)

My time with your magazine has not been without some controversy and, on occasion, more than enough national and international attention. Based on one of our articles about fire support for the Battle of Fallujah II in Iraq, the international press, inspired by anti-American media, erroneously and widely reported that our use of white phosphorous (WP) in Fallujah II violated international laws—that WP was chemical and, therefore, internationally banned. (Of course, even firing a bullet calls for a chemical reaction, but no matter.) Again, the magazine staff received multiple international calls and emails about the article and white phosphorous.

Particularly memorable during that time was the story told by Chief of Field Artillery Major General David C. Ralston. He had been at the Pentagon for meetings and returned to his hotel room one evening. He flipped on the TV at the console in time to see the White House Press Secretary during a press conference say, "According to the US Army's *Field Artillery* magazine, white phosphorous was used in Fallujah…." General Ralston said he jumped back from the television and stood glued to the report. He told me later, "*Field Artillery* is one powerful magazine." I loved that comment.

All Good Things Must Come to an End. If *Field Artillery* has been a good magazine, and I think it has, I lay that at the feet of Field Artillerymen—authors writing for the magazine from the brightest branch in the Army—and because of the continuous and enthusiastic command support of every one of my nine Chiefs of Field Artillery.

Over the years, your magazine has received many letters and emails asking to exchange magazines or for permission to reprint articles, including from Estonia, Kosovo, Peru, Spain, Poland, Russia, Singapore, Taiwan, the Republic of China, India, Portugal, Argentina, Israel, the Netherlands and, of course, Canada, Britain, Germany and France, to name a few. As your Editor, I have been invited to serve on the advisory board of a multi-service military magazine published in India and speak at a Portuguese Army conference. Although honored, I declined both invitations…because both really were interested in what you have to say, not what your Editor has to say about what you have to say.

Canadian Artillerymen once asked if all their units could be added to the magazine's free distribution list. As tempted as I was to do that, the magazine is published using US tax-payer dollars, so free distribution is limited to US government agencies.

In spite of the fact that I never have served in the Army, I have *been* Field Artillery for nearly 20 years. During that time, I have had grand adventures and flown in helicopters and military fixed-wing aircraft, including a C-130 over hostile territory; ridden in howitzers, tanks, rocket launchers, armored personnel carriers and HMMWVs; and experienced an Apache helicopter pilot simulator at Fort Hood, Texas. I rode in and then fired one of the first 155-mm Paladin howitzers—still have the brass primer from the round. My time as the Editor of the *King of Battle's* magazine has been quite a *ride*.

Patrecia Slayden Hollis has been the Editor of *Field Artillery* at the FA Center, Fort Sill, Oklahoma, since 1995 and, before that, had served as the Managing Editor since 1987. She is the only civilian and longest serving Editor of the magazine since its inception in 1911. At the FA School, she taught Communication Skills in the Captain's Career Course. She also was a Training Extension Course writer at Fort Eustis, Virginia; an Associate Professor of English at Park College in Parkville, Missouri; and a reporter for the Lawton Publishing Company's morning and evening newspapers in Oklahoma. Her articles include "Common Sense Writing: The Army Writing Style," published in the Training and Doctrine Command's *Army Trainer*, Summer 1987, and used as a handout by the Air Staff College and the Command and General Staff College. She holds an MA from George Washington University in Washington, DC. Her awards include Molly Pitcher, Honorable and Ancient Saint Barbara's and the Commander's Award for Public Service, the latter from the Commanding General of the Combined Arms Center, Fort Leavenworth, Kansas.

On the right, the Editor interviews Sergeant Major of the Army (SMA) Julius W. Gates for the magazine in his office at the Pentagon. The interview ran in the December 1987 Red Book edition of *Field Artillery*: "NCOs: Maintain the Momentum."

HIMARS Team Wins SECDEF Logistics Award

Redlegs in the 18th Field Artillery Brigade fire a reduced-range practice rocket (RRPR) from their high-mobility artillery rocket system (HIMARS) at Fort Bragg, North Carolina, in 2005.

The Department of Defense (DoD) selected the Army's High-Mobility Artillery Rocket System (HIMARS) Project Management Office and Lockheed Martin Missile and Fire Control for the Secretary of Defense (SECDEF) 2006 Performance-Based Logistics (PBL) Award. The award was presented at the Aerospace Industries Association Fall Product Support Conference at Hilton Head, South Carolina, in November 2006.

Created in 2005 by the Department of Defense, this award recognizes integrated performance packages that optimize a system's readiness at lower costs than traditional maintenance programs. The Army nominated HIMARS for the annual award based on the Army-industry team's combined solutions to make the warfighters' jobs easier and more efficient.

The HIMARS product support concept combines Army organic capabilities with Lockheed Martin's field support. Because of its C-130 transportability, HIMARS can be deployed into areas previously inaccessible to heavier launchers. It incorporates the self-loading, autonomous features of the multiple-launch rocket system (MLRS), firing a "six-pack" of rockets or one Army tactical missile system (ATACMS). Its fire control system and electronics and communications units are interchangeable with the existing M1270A1 MLRS launcher as well as the crew and the crew's training. HIMARS fires the entire MLRS family of munitions, including the precision-guided ATACMS unitary missile and the new precision guided MLRS unitary (GMLRS) rocket.

The Army entrusts Lockheed Martin with responsibilities for the performance-based specification components of HIMARS: the fire control system and launcher loader module. This includes supply, maintenance and related logistical support, including field service representatives for the HIMARS launchers.

HIMARS' logistics first were combat tested in Operation Iraqi Freedom (OIF) and continue the success rate with HIMARS deployed in support of the War on Terrorism (WOT). In all operational scenarios, the HIMARS performance-based logistics concept has ensured exceptionally high operational readiness rates.

LTC John A. Chicoli, FA
Product Manager, FA Launchers
John Bezner, Lockheed Martin
Director, Logistics Modernization

Norwich University Presents MOH Print

Norwich University of Northfield, Vermont, presented the Field Artillery Center, Fort Sill, Oklahoma, a limited edition print of an FA Medal of Honor (MOH) winner from the Civil War on 18 December 2006. The print, titled "For Distinguished Gallantry," is a historically accurate portrayal of Lieutenant E.B. Williston, Norwich Class of 1856, in the act of winning the MOH at the Battle of Trevilian Station, Virginia, on 12 June 1864. The Battle of Trevilian Station was one of the greatest cavalry battles of the war.

The scene depicts Williston commanding a forward-placed M1857 "light" Napoleon brass 12-pounder gun/howitzer in the skirmish line of the 2nd US Cavalry firing shot-gun like blasts to stop a Confederate attack that "advanced to the [gun's] very muzzle." Williston commanded D Battery (Horse), 2nd US Artillery, without losing a gun during the entire war.

An excerpt from the MOH recommendation reads, "In a crisis of action when our lines were being pressed by an overwhelming force of the enemy, Lieutenant Williston planted three guns of his battery in an exposed but favorable position…and then personally moved the fourth gun onto the skirmish line where, using double charges of canister...aided in resisting the charge..."

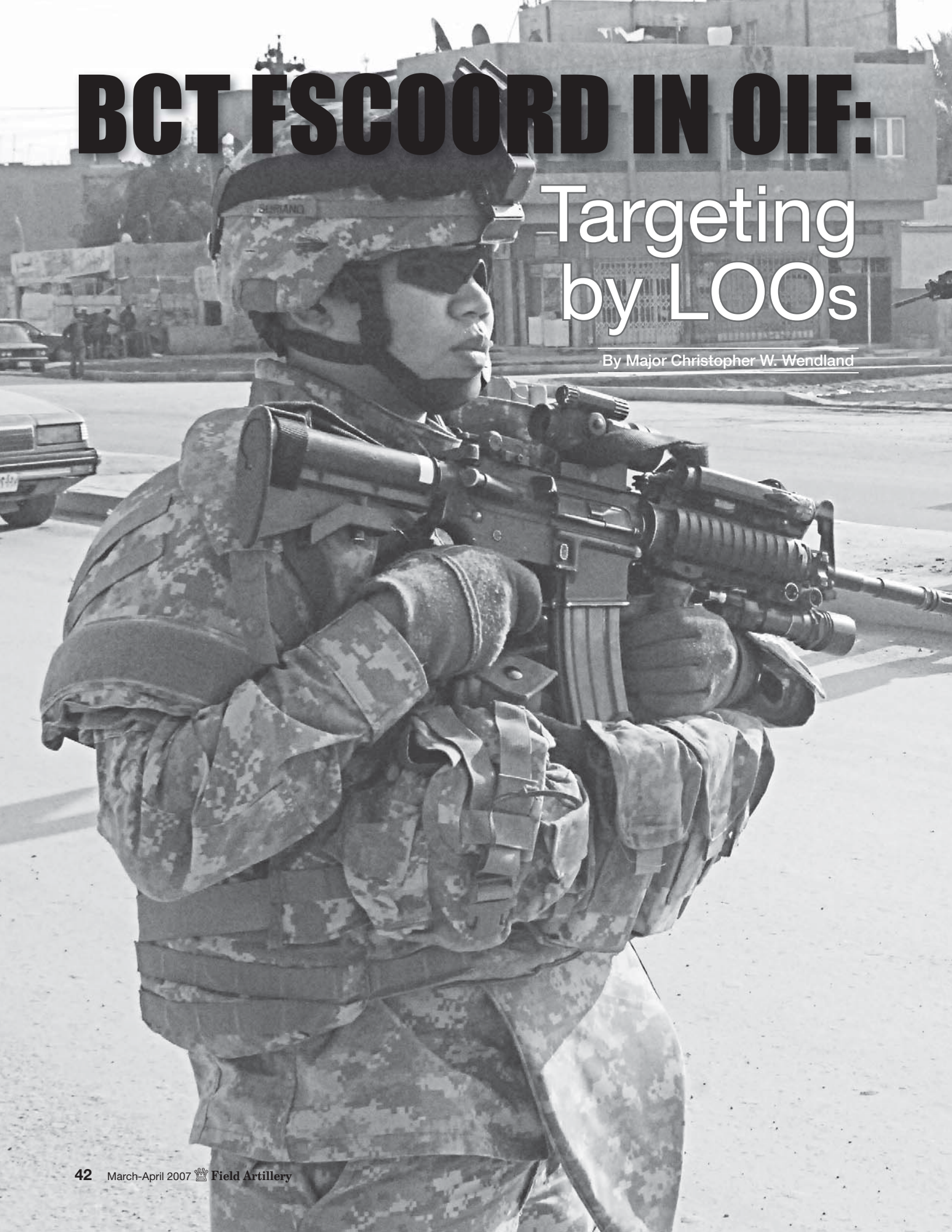
The artist is Dale Gallon of Gettysburg, Pennsylvania. To order a print, readers may go to Norwich University at www.norwich.edu.

On the left is Commanding General of Fort Sill, Major General David C. Ralston, and on the right is Lieutenant Colonel (Retired) Carl F. Holden III, FA, who presented the print on behalf of Norwich University's President, Rear Admiral (Retired) Richard W. Schneider, US Coast Guard, in a ceremony on 18 December 2006 at McNair Hall. (Photo by Linda A. Young, Fort Sill)

BCT FSCOORD IN OIF:

Targeting by LOOs

By Major Christopher W. Wendland



Security Line of Operation (LOO). A Redleg from B Battery, 2nd Battalion, 17th Field Artillery (B/2-17 FA), attached to the 1st Cavalry Division, provides security in the Zafaraniyah area of Baghdad during a 7 January 2007 patrol. B/2-17 FA is part of the 2nd Infantry Brigade Combat Team, 2nd Infantry Division. (Photo by Bronco Suzuki)

The targeting meeting at the brigade combat team (BCT) level is the most important meeting of the week—at least that is the mantra with the 2nd Infantry BCT (IBCT), 2nd Infantry Division, currently forward deployed in east Baghdad, Iraq, in support of Operation Iraqi Freedom (OIF).

The 2nd IBCT is focused on multiple operations simultaneously to return Baghdad—deemed the "center of gravity" for Iraq—to provincial Iraqi control by late summer 2007. Provincial Iraqi control would mean that the Baghdad province is self-governing and provides its own security, an incredible undertaking within a limited time span.

How does the 2nd IBCT "get at it"? Through line-of-operation (LOO) targeting. Brigades are resource managers and synchronizers for their battalions to ensure critical assets are at the right place and time for the success of their subordinate units. LOO targeting helps keep units on track and focused on each of the multiple LOOs.

Training for the Targeting Meetings. The biggest challenge for a developing organization is conducting the targeting meeting. Training environments don't inject enough of the realistic problem sets into scenarios designed to train the development and running of an effective targeting meeting. In training, our brigade talked about the targeting meeting; we attended briefings and concepts on how to run the targeting meeting; we even went to the National Training Center (NTC) at Fort Irwin, California, and attempted to run a targeting meeting there.

But the concepts and methods did not "click" across the brigade staff and battalions until we were in the midst of our relief-in-place (RIP) and transition of authority (TOA). Suddenly, the complexity of the environment and the competition for resources identified the need for a developed method of targeting to complete the BCT commander's mission and achieve his end state.

The battalions require focus for success, and the brigade staff requires focus to ensure the battalions' requirements are satisfied. Here's where the BCT fire support coordinator (FSCOORD) comes in.

The BCT FSCOORD. In today's environment, the BCT FSCOORD looks at more than just fire support integration. He is expected to integrate all lethal fires and nonlethal effects. For every kinetic operation, the BCT FSCOORD must weave in a number of before, during and after nonlethal effects to ensure the BCT is on track and aware of second and third order effects. He is also the targeting bridge between the battalions and the brigade.

The battalions' fire support officers (FSOs) share the same "effects" role and also look out to their battalions'

Communications LOO. 1LT Jonathan Lee, left, assigned to A/2-17 FA, poses with an Iraqi civilian in the Zafaraniyah area of Baghdad during a dismounted patrol to interact with the locals. (Photo by SPC Davis Pridgen)

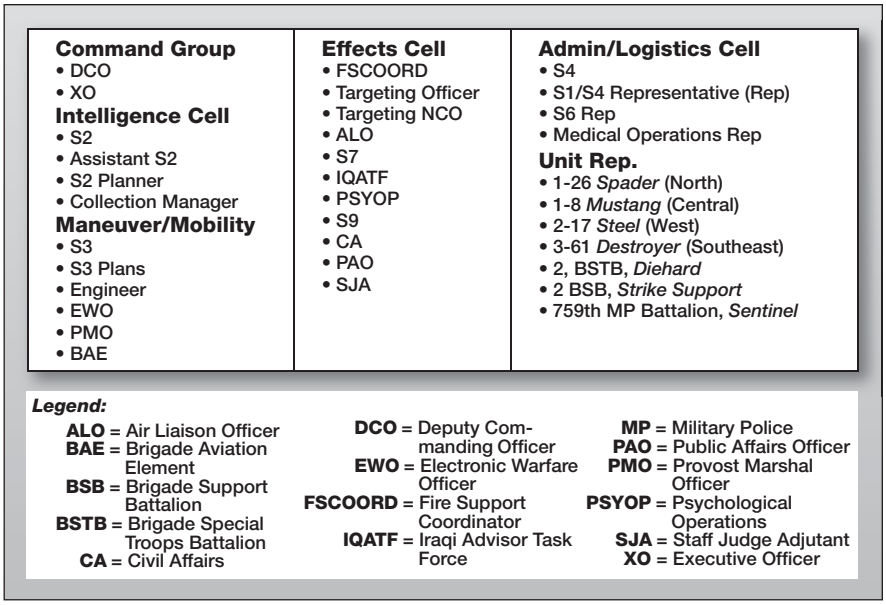


Figure 1: Attendees of the Brigade Combat Team's (BCT's) Weekly Targeting Meeting

long-term operations. They ensure the missions and operations at the battalion level have the long-term significance with task and purpose to achieve their battalion commanders' and, ultimately, the brigade commander's end states.

Finally, the FSCOORD is the bridge between the S2 and S3. As intelligence develops and maneuver assets are required, the FSCOORD determines the priority of missions and assets in support of the overall brigade planning effort. Intelligence drives operations, targeting and effects prioritize the assets and point to the proper course of action, and operations allocate the assets for mission success.

Targeting Meeting. The 2nd IBCT's targeting meeting is conducted weekly. See Figure 1 for the meeting attendees. Each battalion provides the brigade commander its top three targeting priorities by LOO. In our brigade, we use the following four LOOs: security, transition, economics/governance and communications.

The battalions each brief their top three priorities within their LOOs as they compete for assets. See Figure 2 for the targeting meeting agenda. During the meeting, essential staff members are present to understand the overall concept and help the battalions, as necessary.

The focus of the entire meeting is bottom-up. After the S2, S3 and FSCOORD explain the threats over the next week, the adjacent unit operations over the next seven days that may impact on future operations and the focus of efforts in respect to the commander's end state, the units brief the main effort. Each LOO is briefed by all battalions, and the staff listens to each of the battalion's top three targets. The battalions define their targets using the target, purpose, method, assess and end state methodology.

Security LOO. For the security LOO, the targets are linked to a specific cell and tied to a named operation. Given the assets available in a battalion, the number of named operations in a given week is manageable, but what can occur is "resource fratricide." If each battalion decides to conduct an operation on the same day, the BCT resources are not available or, worse, the division's main effort is elsewhere.

The FSCOORD and S3 planner attempt to coordinate operations along BCT boundaries to complement each other or divert operations, other than time-sensitive operations, to deconflict resource requests. This LOO drives the calendar of events for the BCT S2, the collection manager (to prioritize collection assets) and the S3 for fragmentary orders (FRAGOs) to prioritize and allocate essential resources to units for upcoming operations.

Transition LOO. For this LOO, the targets currently are the "frictions" in transitioning security over to Iraqi forces. Engagements with Iraqi counterparts or requested engagements by higher headquarters can better shape the transition efforts.

This LOO drives the calendar of events for the BCT liaison officer and NCOs working with Iraqi counterpart units.

Economics/Governance LOO. The targets in this LOO are means to help the district councils and neighborhood councils achieve legitimacy both within their own governmental structure and among the community. The targets can range from projects to improve issues

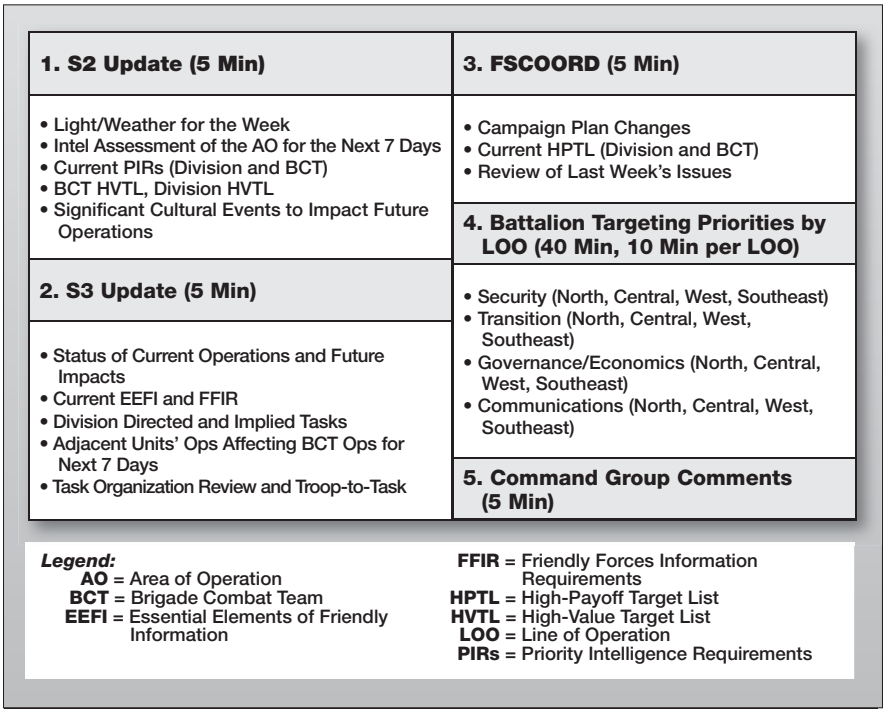


Figure 2: BCT Targeting Meeting Agenda

BCT Priority	Target	Unit	Desired Effects	Method
	Security (ISR Priorities and S3 Mission Focus)			
1	IED Network ("Named" HVIs Associated with Cell)	Bn AO	Reduce IED attacks on the ISF and Coalition Forces.	"Named" Operation
2	VBIED Cell ("Named" HVIs Associated with Cell)	Bn AO	Deny VBIED activity in the "named" district.	ISR/Engineer/MiTT Coordination
3	Security along a "Named Route"	Bn AO	Reduce attacks on the route for freedom of maneuver.	ISR/Patrols
	Transition (SOI Priorities)			
1	Joint Security Station Establishment	Bn AO	Improve cooperation and increase security.	SOI/MiTT/NPTT/ PTTCoordination
2	Appointment of New IA Commander	Bn AO	Improve visible security in AO.	SOI/MiTT Coordination
3	Integration of a "Named ISF" Unit into Bn AO	Bn AO	Improve team relationships; improve ISF relationships.	"Named" Operation
	Governance/Economics (S9/CA Priorities)			
1	DC Assassination Consequence Management	Bn AO	Help transition and provide sympathy.	SOI/CA
2	DC Chairman Meeting across BCT AO	All	Gain political support for future operations.	SOI/CA/PRT
3	Conduct of an Economic Reconnaissance	All	Identify methods to employ for local nationals.	"Named" Operation
	Communications (PAO/PSYOP/IO Priorites)			
1	"Named" Mosque Condolence Payment	Bn AO	Regain mosque and local support.	PSYOP/IO/SOI
2	Announcement of "Named" Bank Opening	Bn AO	Increase legitimacy of governance.	PSYOP/IO/PAO/CA
3	ISF Run MEDOP in "Named" Town	West	Inform local populace; showcase ISF support.	PSYOP/IO/PAO/CA

Legend:
Bn = Battalion
DC = District Council
HVIs = High Value Individuals
IA = Iraqi Army
IED = Improvised Explosive Device
IO = Information Operations
ISF = Iraqi Security Forces
ISR = Intelligence, Surveillance and Reconnaissance
MEDOP = Medical Operation
MiTT = Military Transition Team
NPTT= National Police Transition Team
PRT = Provincial Reconstruction Team
PTT = Police Transition Team
SOI = Sphere of Influence
VBIED = Vehicle-Borne Improvised Explosive Device

Figure 3: BCT Targets Prioritized by LOO for One Week. These priorities become the enduring staff focus for the week, pending any time-sensitive targets (TSTs). Resources the BCT can't provide or issues it can't resolve internally are sent to division and addressed in order of priority; the brigade also leverages the division commander's update briefing (CUB) to gain resources or resolve issues.

plaguing the councils to meeting engagements with critical leaders to improve legitimacy within the community.

This LOO drives the calendar of events for the upcoming week for the BCT civil affairs (CA) officer (S9) and the CA team (CAT) detachment commander.

Communications LOO. For the communications LOO, the targets are events to exploit—successful partnership operations, upcoming project completions, upcoming humanitarian assistance missions or certain populations requiring special focus. The brigade has a number of assets to help the units with their targeting requests: tactical psychological operations (PSYOP) teams (TPTs), Combat Camera, public affairs (PA) reporters, embedded media, radio and television airtime, etc.

This LOO drives the calendar of events for the upcoming week for the BCT information operations (IO) officer (S9), senior PSYOP NCO, TPT detachment, the PA team and Combat Camera.

Prioritizing Targets. After the meeting, the BCT FSCOORD, S3 and S2 prioritize all the targets for the brigade. In a brigade with four maneuver battalions, there will be about 12 targets, three per LOO per week. Once the commander approves the prioritized targets, they are published and then the staff is in motion until the following week's targeting meeting. (See Figure 3.)

These methods and techniques are one way to tackle targeting in the complex environment of Iraq, revolving around four different LOOs. The brigade must focus simultaneously on all four LOOs to achieve successful effects within a constrained timeline. The targeting meeting focuses the battalions and staff for optimal efficiency and steers the course through the commander's vision to his final endstate.

Major Christopher W. Wendland is the Brigade Fire Support Coordinator (FSCOORD) for the 2nd Infantry Brigade Combat Team (IBCT), 2nd Infantry Division, currently deployed to Baghdad in support of Operation Iraqi Freedom (OIF) V. In his previous assignments, he was a Fire Support Officer (FSO), Fire Direction Officer (FDO), Firing Platoon Leader and Service Battery Executive Officer (XO) with 4th Battalion, 1st Field Artillery (4-1 FA), 1st Armored Division, at Fort Riley, Kansas; an FSO and FDO in Seoul, Korea, in support of the Combined/Joint Forces G3 Deep Operations; and a Battalion S2, Maintenance Officer and Battery Commander with 1-27 FA, 41st FA Brigade, in Germany. During OIF I, he commanded Headquarters and Headquarters Battery, 41st FA Brigade, V Corps Artillery. He holds a Master of Science in Space Systems Operations from Webster University at St. Louis, Missouri.

Field Artillery
(USPS 309-010)
P.O. Box 33311
Fort Sill, OK 73503-0311

Periodicals Postage
PAID
San Bernardino, CA